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THIS WEEK'S NEWS

PAGE

SOME ILLUSTRATED NOTES on the extension to Nairobi Cathedral, the foundation stone of which is to be laid on October 31, are contributed by Canon W. J. Wright. 540

REDUCTIONS IN CAPITAL EXPENDITURE on the fuel and power industries, the education programme and new housing were called for by the Prime Minister in his announcement of Government economy measures in the House of Commons on October 24. A statement on the proposed cuts, so far as they affect the building industry, has been made by the National Federation of Building Trades Employers. 542

THE ASSOCIATION OF OLD VICTORIANS invite the submission of designs in competition for proposed war memorial buildings in the form of a small art school at Victoria College, Jersey, C.I. Premiums of £75, £50 and £25 are offered. 542

A FIRST PREMIUM OF £5,000 is offered by the Northern Ireland Hospitals Authority in connection with an architectural competition for a proposed £1,000,000 mental colony building at Muckamore, Co. Antrim, Ulster. 542

A VILLAGE GROUP of 28 cottages and a general store in Windsor Great Park has been designed by Messrs. Sydney Tatchell, Son and Partners, FF.R.I.B.A. The scheme is described and illustrated. 543

A NEW HOT POOL for paralysis treatment has been installed by the Ministry of Works at Osborne House, formerly the home of Queen Victoria and now the King Edward VII Convalescent Home for officers of the Services. 553

THE IMPORTANCE of design and construction in regard to subsequent maintenance costs on housing estates was emphasised by Dr. Ronald Bradbury, Ph.D., F.R.I.B.A., City Architect and Director of Housing, Liverpool, at the annual conference of the Institute of Housing. Dr. Bradbury, who said that initial cost was not the only cost and that "ersatz" materials might be financial fifth columnists, suggested the files of local authorities, if properly classified, could provide accurate information on the maintenance costs of various materials and finishes over a long period. 554

THE RADIO INDUSTRY COUNCIL has issued for the guidance of local authorities a memorandum on the provision and fixing of television aerial masts. 556

THE REPLACEMENT of an outworn factory roof at Warrington with a new one of aluminium alloy and standard sheet rooflights is described and illustrated. 557

A TALK ON "Building Construction in the U.S.S.R." was given by Professor Bernal at a recent meeting held at the Architectural Association. 558

THE LONDON COUNTY COUNCIL has been asked by its General Purposes Committee to promote in the session of Parliament of 1949-50 legislation to empower metropolitan borough councils to provide municipal laundry services. 559

ECONOMICS OR LUNACY?

THE Government's plans to cut national expenditure by £250 millions, apart from savings in national defence yet to be announced at the time of writing, include cuts in capital investment of about £140 millions. Of this sum one-half is to be saved in building, £35 millions by cuts in the housing programme and an equal amount by a general control of building. In Mr. Attlee's words: "The Government will see that the reduction in the number of new authorisations is made in accordance with a proper regard to priorities. By reducing the number of licences issued for the erection of houses privately we shall secure that the local authority programme for the building of houses to let can proceed without any marked reduction." The general control of building, the Prime Minister added, is to be "tightened up considerably." The text of his statement is on page 542.

No step yet taken by the Government has so clearly betrayed the triumph of doctrine over common sense as does the declared intention to reduce still further the 4:1 ratio of local authority to private house licences. Notwithstanding the fact that over a million new homes have been provided since the war, the majority by local authorities to let, and therefore subsidised, the Government proposes to continue this costly and discriminating process at the expense of those families of every class which both need and are willing to pay for a home of their own. The crisis has presented the Government with the need and the opportunity to make substantial savings in expenditure on subsidies. So far from accepting this opportunity, a decision has been taken which will undoubtedly still further restrict that form of house-building which, even under the present hampering conditions, sets the pace for speed of completion and—given even a little of that head which Mr. Bevan over two years ago promised "once the hump was past"—would slash housing costs as well. As it is, the total savings to be afforded by these means amount to about 7 per cent. of the total building programme and to that extent are bound to cause some unemployment which can only be aggravated by the smaller cuts in the education and fuel and power programmes. We shall therefore shortly arrive at the position where at the expense of some unemployment we shall get fewer houses but the cost to the state in subsidies remains the same. Is this economics or lunacy? The Government must think again.

AN UNJUST REGULATION

LEGISLATION by delegated powers is a process which to-day is too much in evidence. It is a process which has but two virtues, speed and flexibility, virtues which have importance in time of war but which cannot obscure the fact that government by Ministries rather than by Parliament is alien to the British mind. When this form of legislation is also susceptible of injustice, it is time that public attention be drawn to it and amendment sought.

Such an instance is contained in Regulation 56A, published by order of Council under the Emergency Powers (Defence) Acts, 1939-40. Paragraph 8 reads as follows:—

> If any condition attached to an authorisation or licence granted for the purposes of this Regulation is contravened or not complied with, then, whether or not the authorisation or licence is revoked, the person undertaking the execution of the operation, or the carrying out of the work, in respect of which the authorisation or licence was granted and any architect, engineer or other person employed in an advisory or supervisory capacity in connection with the execution of the operation or the carrying out of the work shall each be guilty of an offence against this Regulation.

In effect this means that an architect or other professional adviser can be prosecuted and convicted of an offence merely by reason of a breach, by a third party, of one of the conditions of a building licence *although the architect had no knowledge of such a breach and could not reasonably*

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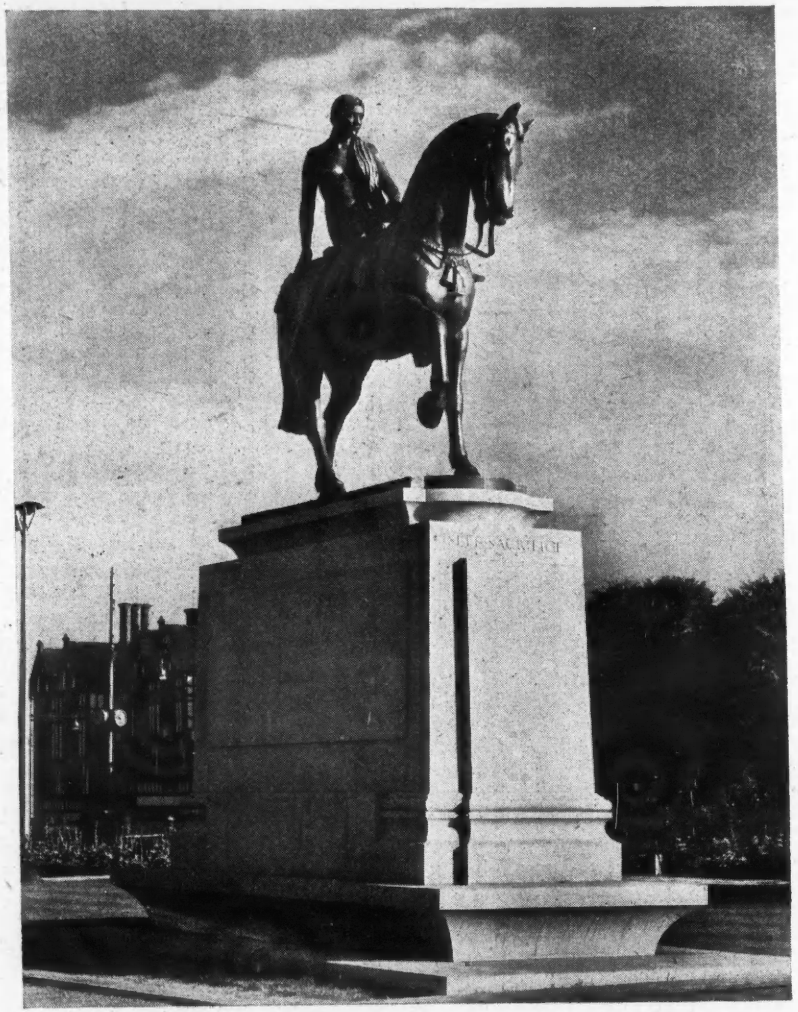
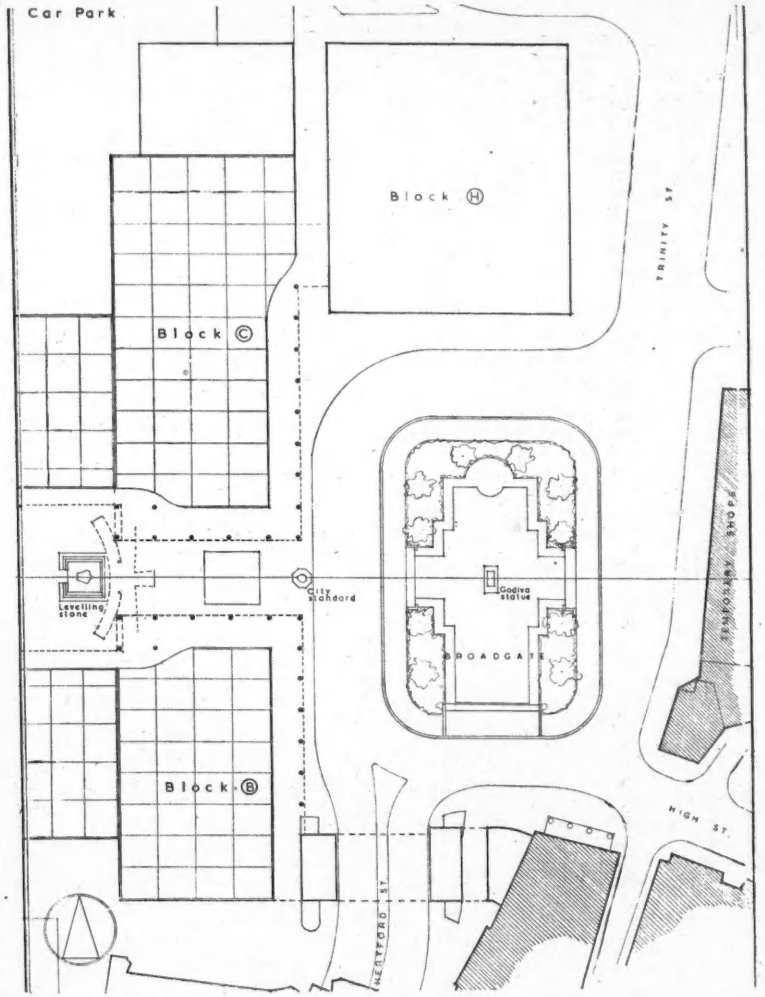




THE LADY GODIVA STATUE, COVENTRY. SIR WILLIAM REID DICK, R.A., SCULPTOR.

The Lady Godiva statue, presented to the Corporation of Coventry by Mr. W. H. Bassett-Green, was unveiled by Mrs. Lewis Douglas, wife of the American Ambassador, on October 22. The statue, which is a memorial to Coventry citizens who lost their lives during air raids, is in bronze and stands on a pedestal of Portland stone. It forms the centrepiece of the design for the reconstruction of Broadgate, prepared by Mr. Donald E. E. Gibson, M.A., A.R.I.B.A., A.M.T.P.I., the City Architect. The gardens in the immediate vicinity of the statue were designed by Mr. Percy Cane.

have been expected to know of it. To take a simple example, a private arrangement between a client and the builder for work outside the conditions of a licence—e.g., three coats of paint instead of the two specified—could render the architect liable to prosecution although he might have no knowledge of what had taken place until the presentation of the final accounts. Under paragraph 8 of the Regulation no defence is open to him.

This matter has for some time engaged the attention of the Architects Registration Council, which recently, in conjunction with the R.I.B.A., sent a deputation to the Minister of Works to plead the injustice of the Regulation as it bears on professional advisers and to ask for its removal or amendment. The results of this meeting, as tabled at the last meeting of the Council, reported in our last issue, are disappointing in the extreme. Briefly the Ministry officials, while agreeing that the position obtaining under para. 8 of the Regulation was irregular, contended, since no actual injustice had occurred, that there was no practical issue involved. In a subsequent interview between the solicitor to the Council and the Treasury Solicitor and the Legal Adviser to the Ministry of Works it was stated that before a prosecution is begun against an architect, the architect in the first place is written to and asked if he will give an explanation of the matter, and that if the Ministry is in fact satisfied that he did not and could not have known of the contravention, no proceedings would be taken. The Minister has therefore declined to seek an amendment to the Regulation.

This decision must leave the palpable injustice of the offending paragraph unaltered. In our opinion, the Ministerial view is beside the point, i.e., that as no injustice has in fact been proved there is no point of practical substance to be considered. It is quite impossible to say in how many cases an architect, knowing that in the terms of the Regulation he has no defence, has, in order to save time and expense, elected, when prosecuted jointly with the builder, to plead guilty and nothing more has been heard of the matter. In consequence, all architects are in the unnecessary fear of prosecutions for which there is no defence, and it is no answer for the Ministry of Works to say that if they are satisfied that the architect did not and could not know of the contravention no proceedings will be taken, any more than it would be consolation to a person who, *nolens volens*, had been sat on a cask of gunpowder to assure him that, provided he can make adequate polite noises, the powder will not be touched off.

It remains that, under the Regulation as it stands, an unjust prosecution is possible and architects are left to the discretion of the Ministry of Works whether they will bring proceedings or not. It is unjust that architects should thus be put on the defensive and required to apologise for and explain the actions of a third party for which they are not responsible.

The paragraph should be amended to secure that an architect or other person engaged in an advisory or supervisory capacity should be able to plead in defence that the breach of the licence complained of was done without his knowledge or authority and he could not reasonably have been expected to know of it. The Minister of Works must take action to expunge a Regulation which is entirely contrary to the cardinal principles of British law and justice.

THE REPLANNING OF THE LONDON AREA

THE three main plans for the London Area are that of the L.C.C. in 1943, for Greater London in 1944 and for the City in 1947. The second of these was considered and, in general terms, referred to the 143 planning authorities then within the area, from which were formed 23 joint committees to co-ordinate the various aspects of the scheme and to relate it to the L.C.C. and City of London plans. An Advisory Committee comprising representatives of all the joint committees, the County Councils and the City Corporation was set up for this purpose, which endorsed the Greater London Plan subject to certain alterations, and the Minister of Town and Country Planning confirmed some of the recommendations but modified others.

Thus, despite the large number of planning authorities, there had been joint action in the preparation of an outline plan to which these were ready to conform, including the redevelopment of the central areas at lower densities and the preservation of supplementary main road lines. As the Plan depended as much on checking development in one area as on encouraging it in another, the local authorities could not handle the matter comprehensively, and though this difficulty was eventually dealt with in some measure by the 1947 Town and Country Planning Act it was felt desirable to appoint in March, 1946, a compact committee of 12 members under the chairmanship of the Rt. Hon. Clement Davies, P.C., K.C., M.P., whose Report has now been issued.*

Two members have been lost by death, and one by resignation, and the Report of the remaining nine is not unanimous; six have signed, subject to a reservation on one point by one of them, while three have offered a minority report on very definitely different lines, criticising many of the conclusions reached in the majority report.

When the Act of 1947 had been passed, coming into operation on July 1, 1948, it materially changed the situation by transferring the power to prepare planning schemes from the county district councils to the county councils ; the committee had therefore to consider whether the reason for its appointment still existed. The conclusion reached was that though the powers of the public authorities had been reinforced for acquisition and development, the problem of securing concerted action over a large number of districts remained the same, and that the inquiry should continue. The first stage, the making of the plan, must be followed by the second, that of seeing that it is carried out, and it is this second for which the committee was set up.

The dominating proposal of the Plan is that for the decentralisation of one and a quarter million people, together with industries and other employment sufficient for their support. For this operation the various parts of the Region are completely interdependent. Not only as regards the provision of housing and its ancillaries, but also as to traffic and the services for water, electricity, gas and sewage disposal has the entire area to be treated as a whole; and the reservations for open spaces (the green belt) must be related to the demands of the redistributed population.

Greater London as planned includes, in addition to London County, the Counties of Middlesex, Hertfordshire and Surrey, parts of Kent, Essex and Buckinghamshire with small areas of Bedfordshire and Berkshire as well as the three county boroughs of Croydon, East Ham and West Ham. These are the 12 bodies now the planning authorities in the Region. In addition, the following have development functions, the City of London, 28 Metropolitan Boroughs, 51 Borough Councils, 62 Urban District Councils, 27 Rural District Councils, 71 Water Undertakers, 6 Joint Sewerage Boards, 6 Catchment Boards, 4 Electricity Boards, 4 Gas Boards, the Port of London Authority and the British Transport Commission.

It is obvious that a region in which there is such a large number of interested authorities, sometimes having conflicting demands, must have a scheme for the co-ordination of these. No single Government Ministry can effect this, as here again six or more Departments are concerned, and the majority report of the present committee sets out that a Local Government Commission should be appointed to review the whole region and submit proposals for its government. As an interim measure a regional advisory committee should be established under the Town and Country Planning Act, 1947, to deal with urgent questions.

The minority report challenges the possibility of any form of control divided between such a number of authorities, and advocates placing Greater London in the hands of one authority exercising powers throughout the region. It is claimed that the only method by which this can be done under the present legislation is by creating a joint planning board.

* Ministry of Town and Country Planning Report of the London Planning Administration Committee, 1949. H.M. Stationery Office; fcp., 1s. 6d.

were designed by Mr. Percy Cane.

NOTES AND NEWS

Teaching Architecture.

A POINT frequently raised by architectural educationists is the extremely pertinent one as to whether architectural teachers should be professional architects or professional teachers. Obviously a fusion of the two is the ideal combination for successful teaching, but it is rare that time enables both or either to achieve this pretty high-ideal existence. It would seem to be obvious that architectural education must either be adjusted in the scope it offers to architects who develop an urge to teach, or it must remain—as in so many schools it certainly still is—an academic treatise on what is now an essentially non-academic study. Few people will deny that the golden age of architectural scholarship in the classical or grand manner is past. The essence of architecture now is simplicity of motive and material, and knowledge such as this can be imparted only by teachers who know the difficulties and complications of the work of the practising architect. Modern design theory is modern practice theory.

Attracting the Practising Architect.

To pursue such a policy as this, our schools must obviously attract practising architects. At the moment architectural teachers are scarce, and for two reasons. First, the rate of pay is not reasonable enough to cause the practising architects to spare time from their private work; secondly, because of the shortage of staff, architects who teach are often called upon to work such hours as seriously to affect their practices. It all seems to reduce itself down to more pay for architectural teachers; the staffing situation would then be eased and a more convenient time-table would become possible for architects who have that necessary connection with the practical world of building.

That architectural education to-day is of vital importance cannot be denied nor that scholarship is a thing to be cherished. But unless the world's condition takes a very rapid turn, the days of the Beaux Arts spirit have left us for good. Something as attractive must take its place, and the flowers of such a movement can only start from seed sown in architectural schools.

Bombed Baroque.

To those who have seen Mr. Carol Reed's most interesting production, "The Third Man," the scenes of war-scarred Vienna must have come as an architectural shock. That Vienna's architecture was a mixture of good, bad and indifferent we all know, but together with Prague and in a smaller sense Warsaw, it has always represented a period, now lost to us, of gaiety and freedom in architectural conception. The term "sculptured architecture" could well describe the buildings of Vienna, and in "The Third Man" the shots of the squares, now piles of ruins, with perhaps a statue or two as the only standing things, backed by the scaffolded west front of St. Stephen's Cathedral or the Prater fairground, brought home once again the ruinous effect of war.

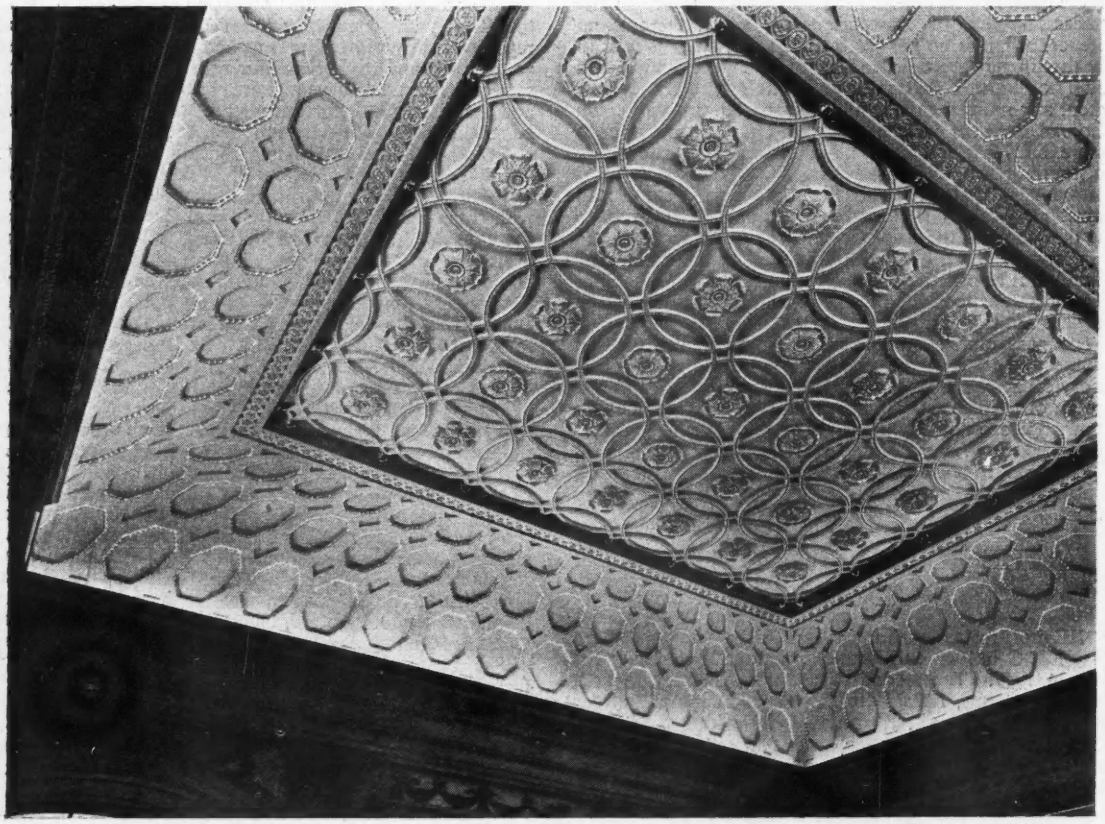
We could not help comparing this contemporary film of contemporary happenings with a Viennese forerunner "Maskerade in Vienna." There, the period was Edwardian, lush and lyrical; it is difficult to recall that that period was a mere forty years ago. The only link between the two expositions of time as shown in the films was provided by the music, for some parts of the zither music played by Anton Karas in "The Third Man," was, if we remember correctly, played in "Maskerade." That, at least, could not be bombed out of existence.

The Admiralty Board Room.

THE photograph reproduced below of the Admiralty Board Room as reinstated after damage by enemy bombs in April, 1941, is an interesting supplement to the article on the subject printed in our issue for September 16 last. The whole of the original enriched solid plaster ceiling and about one quarter of the coffered cove were destroyed completely by bomb blast. The remainder of the cove was splintered and fractured in certain other parts. The photograph, which was taken from the left-hand door of the Board Room, shows the whole of the new ceiling which has been modelled and carried out in fibrous plaster by the Decorative Art Guild, Ltd., who also renewed the coffered coves together with the final decoration and gilding.

A.A. Activities.

AN exhibition of members' holiday sketches opened at the Architectural Association, Bedford-square, W.C.1, on October 26 and will remain open until November 24. A musical evening for members is also being arranged and is expected to be held on November 16.



THE BOARD ROOM CEILING AT THE ADMIRALTY, AS RESTORED. *(See Note.)*

Mr. Leighton Lucas, the organiser, has chosen a programme of contemporary music which includes works by Milhaud and Martinu.

Photographic Exhibition.

WITH such a wide range of subjects to cover and with so relatively small a space in which to do it, it is not surprising that the Institute of British Photographers could afford to include only a mere half-dozen or so architectural studies in their exhibition of "Photography in Home and Country" which was held recently at the Alpine Gallery, South Audley-street, W.

About a thousand entries were received for the exhibition of which number only 200 could be hung. This final selection was made by three separate juries, each of which set a very high standard in classifying the entries.

If any studies of modern architecture were submitted, none succeeded in attracting the sympathy of the scrutinising juries. Or it may be that none was submitted, which is very probable, for most photographers seem to have an abhorrence of newness in buildings and prefer (unless there is a commission in it, of course) to wait until time has imbued them with some sort of character before turning a camera on them.

However, the architectural studies which did manage to find places on the gallery walls were, without exception, very fine photographs. One, "Lierre," by Tom Weedon, A.I.B.P., A.R.P.S., is reproduced on this page. Other interesting pictures in the same category were by Thelma Mason, A.R.P.S., and Paul Wiesner.

A Memorial to Empire Flyers.

A MEMORIAL is to be erected at Cooper's Hill, Surrey, to 20,000 members of Air Forces of the Commonwealth who were killed in Britain and North-West Europe in the 1939-45 war and have no known grave. The site, which overlooks the Thames at Runnymede, has been presented to the Imperial War Graves Commission by Sir Eugen Millington-Drake and Lady Millington-Drake. The memorial is to be designed by Mr. Edward Maufe, R.A., the Commission's chief architect in Britain.

Houses in the U.S.A.

THE BUILDING CENTRE'S next temporary exhibition, opening on Monday, October 31, will be entitled "Houses in the U.S.A.," and will illustrate the development of domestic architecture in the U.S. and includes photographs of much of the best contemporary work. The exhibition will remain open for one month, Mondays-Fridays 10 a.m. to 5 p.m., Saturdays 10 a.m. to 1 p.m.

Professional Announcements.

MESSRS. A. F. SCOTT AND SONS, FF.R.I.B.A., of 23, Tombland, Norwich, have taken into partnership Mr. P. J. Arnold, A.R.I.B.A., Mr. K. A. Brewster, A.R.I.B.A., and Mr. A. L. Cobb. The name of the firm will remain unchanged.

The London office address of MESSRS. JAMES M. MONRO AND SON, chartered architects, will in future be 6, Spring-gardens, Cockspur-street, London, S.W.1. The Glasgow and Watford addresses of the firm remain unchanged.

COMING EVENTS

Monday, October 31.

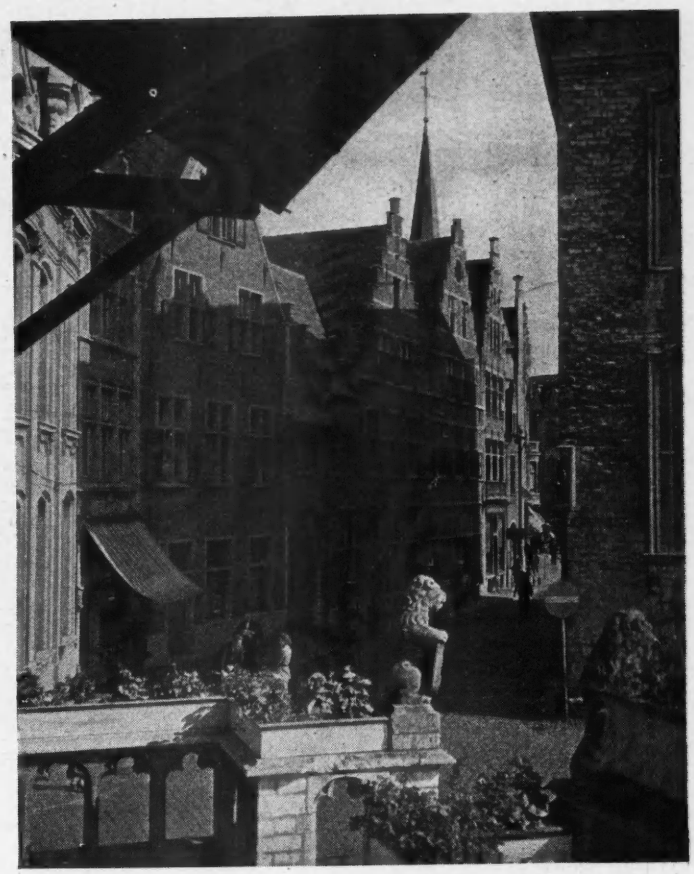
TIMBER DEVELOPMENT ASSOCIATION.—"Timber Preservation," by Mr. H. A. Cox, M.A. Maidstone Technical College. 7.15 p.m.

Tuesday, November 1.

R.I.B.A.—Inaugural general meeting and address by the President. R.I.B.A., 66, Portland-place, W.1. 6 p.m.

Wednesday, November 2.

ECCLESIOLOGICAL SOCIETY.—Mr. H. S. Goodhart-Rendel, P-P.R.I.B.A., on "Rogue Architects of the Victorian Era." Archbishop Davidson Institute, Lambeth-road, S.E.1. 7 p.m.



LIERRE, BELGIUM. From a photograph by Tom Weedon. (*See Note.*)

TOWN PLANNING INSTITUTE.—Annual dinner. Trocadero Restaurant, London, W.1. 7 p.m.

Thursday, November 3.

TOWN PLANNING INSTITUTE.—Presidential address by Sir George Pepler, C.B., F.R.I.C.S. Assembly Room, Central Hall, Westminster, S.W.1. 6 p.m.

Friday, November 4.

INSTITUTION OF MECHANICAL ENGINEERS.—"Some Developments in Instrumentation for Air Flow Analysis," by Mr. K. W. Todd, M.Eng., A.M.I.Mech.E. Storey's-gate, St. James's Park, London, S.W.1. 5.30 p.m.

INSTITUTE OF REGISTERED ARCHITECTS.—"The L.C.C. Concert Hall," by Mr. Peter Moro, F.R.I.B.A., associated architect for the new hall. St. Ermin's Hotel, Caxton-street, S.W.1. 6.30 p.m.

LONDON BUILDERS' FOREMEN'S ASSOCIATION.—"Welding in the Building Industry," by Mr. Oliver R. Colbert, M.R.San.I., A.M.I.S.E. Memorial Hall, Farringdon-st. 6 p.m.

FROM "THE BUILDER" OF 1849

Saturday, October 27, 1849.

THE WATER QUESTION. . . . The Lambeth Waterworks, we see, are proposing to obtain an improved supply of water from the Thames at Ditton, and to abandon altogether the present source of supply. Than the present source nothing can be worse; and if all we have heard be true, the company have much disease and misery to answer for. . . . The question must be taken up by Government. Our contemporaries of the London and Provincial Press (and we are grateful to them for doing so) have spread far and wide, to an extent we could not have ventured to anticipate, our assertion that "all London ought to cry as loudly as if next door were on fire, 'Water! Water!! Water!!!'" We must have not merely sufficient water, but *pure* water. Not merely pure water, but *cheap* water, or else we perish.

CORRESPONDENCE

A.B.S. Tombola

TO THE EDITOR OF *The Builder.*

SIR,—In November, when the Building Exhibition opens, the Architects' Benevolent Society will be embarking on its hundredth year of helping architects and their families in need. To aid its funds it will be holding a Tombola at the exhibition, thanks to Mr. H. Greville Montgomery. It hopes to raise a thousand guineas; for this it needs a thousand prizes, because every holder of a guinea ticket receives a prize.

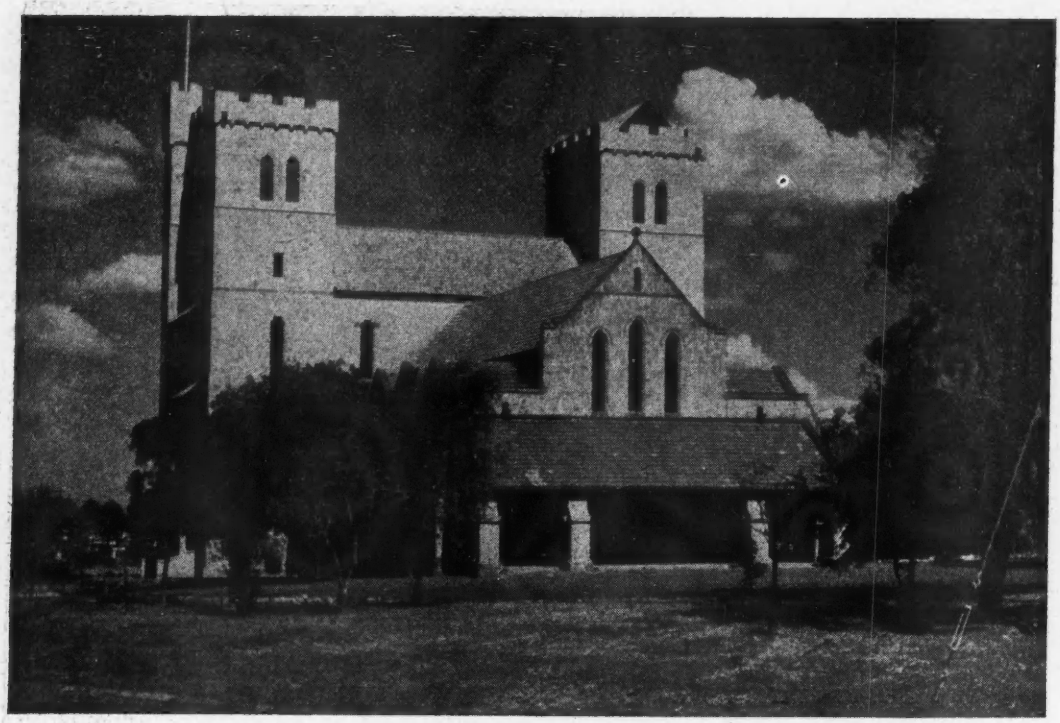
Many gifts for use as prizes have been received already, but many more are needed. Among the gifts already received or promised are a breakfast set, a bowl of hyacinths, a book token, some autographed books, pictures, a goose and a turkey. The A.B.S. would like to receive drawings, etchings, books, china, pottery, glass, modern or antique works of applied art or anything which you think someone would like to win as a prize. These should be sent to the Secretary, A.B.S., 66 Portland-place, London, W.1, as soon as possible.

Please help us to raise the thousand guineas. MICHAEL WATERHOUSE,
President, A.B.S.

66, Portland-place, W.1.

Broadcast on Building as a Career.

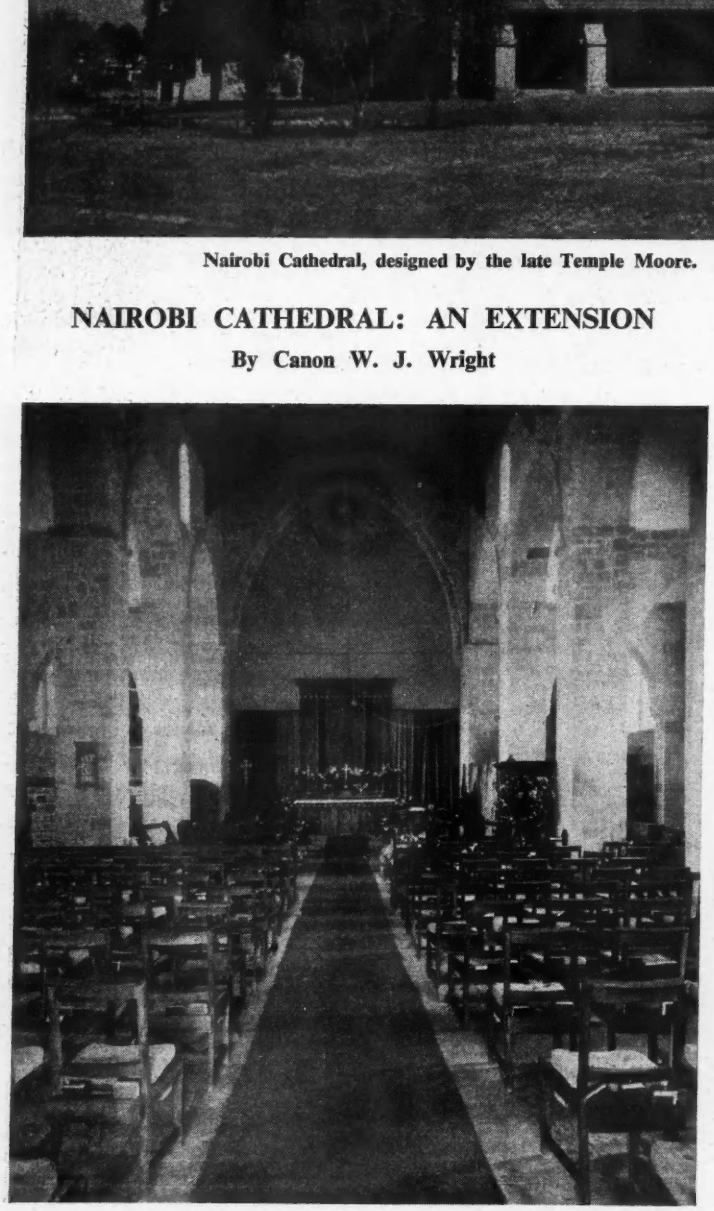
THE B.B.C.'s Schools Broadcast Service on Friday, November 4, will include a talk by a Sussex apprentice on "The building industry as a career for lads about to leave school." The broadcast will be heard on the Home Service at 11.20 a.m.



Nairobi Cathedral, designed by the late Temple Moore. *Below*: **The nave.**

NAIROBI CATHEDRAL: AN EXTENSION

By Canon W. J. Wright



SIR PHILIP MITCHELL, Governor of Kenya, is to lay the foundation-stone of the extension of Nairobi Cathedral on October 31.

The large square stone pillars, a feature in the original plan designed by the late Temple Moore, which give such excellence to the nave, are not to be continued in the chancel.

The choir stalls would have backed against the inner face of the line of these pillars and the Cathedral aisle taking the centre would have been relatively narrow. Had the original plan been followed, behind the line of pillars on either side would have been an ambulatory. Also, the roof of the chancel would have been in three portions, the higher centre portion being supported by the pillars on either side, a lower portion springing from a point below the line of clerestory windows.

The change proposed involves building a single hammer beam roof resting on the outside walls of the chancel and thus dispensing with the double row of pillars.

Among the advantages gained by the changes are a much more spacious chancel, a wider central aisle between the choir stalls, the simplification of the roof structure and a very considerable economy in stone. Indeed, it is estimated that the saving will be in the region of £10,000.

While grateful for the advantages, there will be some regret that Temple Moore's stately symphony in stone is to remain unfinished.

FOOTS CRAY PLACE

Destruction of a Palladian Villa

From a Correspondent.

WITH the destruction by fire last week of Foots Cray Place, Kent, there passes from the English scene another notable example of Palladian domestic architecture. With neighbouring Mereworth Castle and Chiswick House, the latter purchased for the nation a year or so ago by the Ministry of Works, Foots Cray Place, with its Ionic colonnades of six three-quarter pillars on each of its four sides and portico of the same order at its entrance front to the north-west, bore striking testimony to the remarkable influence the work of Andrea Palladio in Italy had upon the country house architecture of England in the eighteenth century.

Although Colin Campbell, the architect who designed Mereworth Castle, was largely responsible for the introduction to this country of this era of country house design, the first examples of Palladian influence were introduced much earlier by Inigo Jones with his designs for Wilton, the Banqueting House and the Queen's House, Greenwich.

"Absurd Wastefulness."

As was to be expected, the style was by no means suitable to the wayward English climate, and the problems were ever those of contrivance and adaptation. That this was so the late Sir Reginald Blomfield made abundantly clear when he wrote in the second volume of his "History of Renaissance Architecture in England": "Campbell's next important building after Houghton, Norfolk, was Mereworth Castle, Kent. This extraordinary design for an English country house clearly indicates the gradual decay which was overtaking English architecture.

"Palladio once made a skilful design of a villa for Monsignor Paolo Almerigo consisting of a circular hall enclosed in a square and surrounded by rooms *en suite*. This villa was well adapted for summer residence in a hot climate; it provided shelter from the blazing sun and a free current of air in all directions—two qualities essential in Italy, but which exactly disqualified it for a country house in the damp, cold atmosphere of the North. Notwithstanding, this design was so much admired by the aristocratic virtuosi of the eighteenth century that it was moved to transplant it entire to England, and Campbell duly reproduced Almerigo's villa at Mereworth. Chimneys would have spoilt the effect, and accordingly Campbell—he was certainly a most ingenious person—managed to get rid of his flues through the dome. He formed the dome over the great central hall in three parts—an inner plaster ceiling, an outer dome of wood covered with lead, and in between the two a brick dome, through which the flues were conducted to discharge their smoke through a small covered cupola at the top.

"The hall was 38 feet in diameter and 60 feet high, and the only light it received was from four circular openings five feet in diameter in the dome.

"Vanbrugh's extravagance was as nothing to the absurd wastefulness of this design, which was also reproduced at Foots Cray in Kent and for Lord Burlington at Chiswick."

Similarity of Plans.

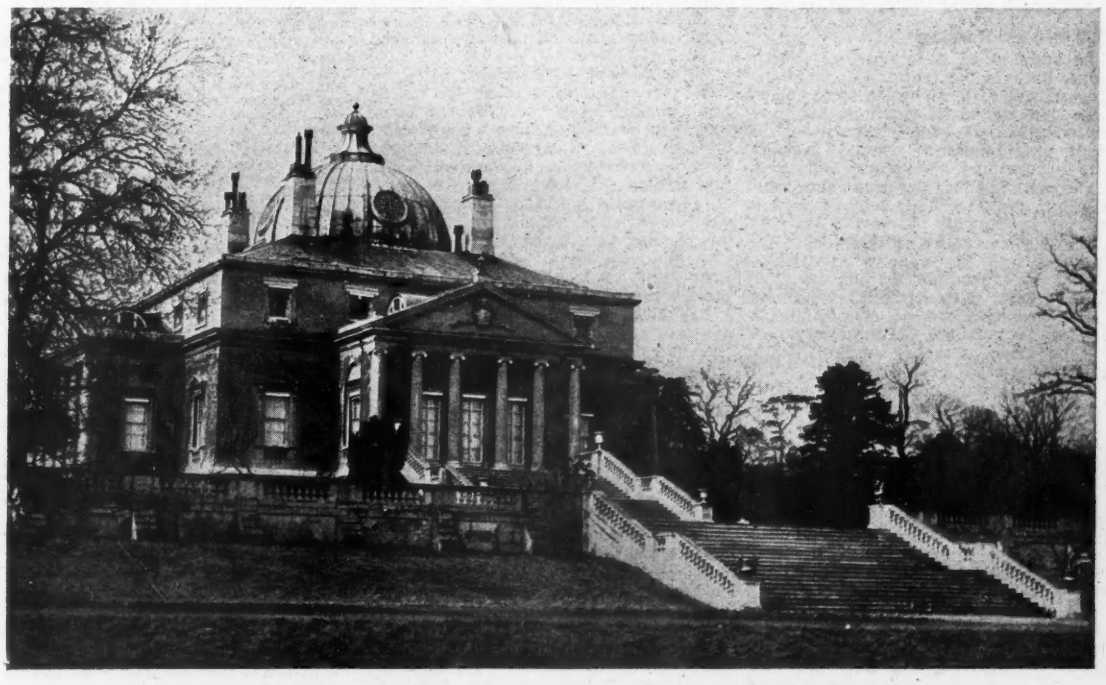
Thus two centuries or so after Palladio (whose inspiration, it has been suggested, was the Pantheon, in Rome) produced his design for the Villa Capra at Vicenza these remarkable, but completely unsuitable villas were built in the English countryside. Their similarity of plan to that of the Villa Capra establishes beyond doubt the origin of their conception, although the domed halls of Foots Cray Place and Chiswick House are octagonal, whereas those of the Villa Capra and Mereworth Castle are circular.

Some Historical Notes.

Foots Cray takes its name from the River Cray and from a certain Godwin Fot, its owner in the reign of Edward the Confessor. The locality is mentioned in the Domesday Book and is situated on the hundred of Ruxley, 12 miles from London on the road to Maidstone. The parish is bounded by Chislehurst, North Cray, Paul's Cray, Bexley and Eltham.

Foots Cray Place was built in the year 1756 by Bourchier Cleve, a London pewterer, on a part of the demesne lands formerly appertaining to Sir Francis Walsingham and slightly north of the spot where an old family mansion had stood for 250 years or more. It stands on a slight eminence and from the principal front there is a gradual descent to a canal that is cut from the River Cray. Cleve carried out many improvements to the estate, notably by closing the park and embellishing it with plantations. His daughter married Sir George Yonge, who for a time housed his valuable collection of pictures in the villa. Successive owners of the property were Benjamin Harenc, a local benefactor; Nicholas Vansittart (Lord Bexley), one-time Chancellor of the Exchequer; and, in more recent years, Lord Waring, during whose occupancy the villa was a popular rendezvous of prominent personalities in the fields of diplomacy, politics and business.

During the war, from 1939 to 1945, Foots Cray Place served as the naval training establishment, H.M.S. Worcester, and a few months ago the property was acquired by the Kent County Council Education Committee with a view to adapting it, at a cost of some £10,000, for use as a children's museum.



FOOTS CRAY PLACE, SIDCUP, KENT. The south-east front before the fire.

CUTS IN CAPITAL EXPENDITURE

Savings on New Housing, Education, Fuel and Power

REDUCTIONS in capital expenditure on the fuel and power industries, the education programme and new housing were called for by Mr. Attlee in the course of his announcement of Government economies in the House of Commons on October 24.

THE PRIME MINISTER said that the Government had made it clear that any advantages to be reaped from the devaluation of the pound might easily be offset by an inflationary tendency. With devaluation we had a great opportunity to increase our exports; but until new production could fill the gap the increased diversion of goods from the home market which would be necessary to maintain and then increase our foreign exchange receipts would reduce the amount of goods available, while the amount of money available to buy them remained about the same. To counter this risk of inflation and that arising from excessive demand on the home market we must reduce expenditure and increase production.

The Government had decided to take action which would, apart from a saving in defence expenditure, have a total disinflationary effect when in full operation of about £250 m. a year. Reductions would be made both in the capital expenditure programme and in Government expenditure.

Dealing with capital expenditure, Mr. Attlee continued: In 1948 the value of goods devoted to fixed investment was about £2,000 m. This is well above the pre-war rate of capital expenditure. For the current year the figure may approach £2,100 m. We now propose in the new programme which is coming forward for 1950 to reduce the rate of this capital expenditure by about £140 m. a year. We hope that this will become fully effective in the second half of 1950.

Cut in New Housing.

In addition to a number of smaller items, both in the industrial and in the Government field, on which some reductions can be made, we must secure a substantial total contribution from the large programmes of capital expenditure of the fuel and power industries, the expanding education programme, new housing, and the large field of miscellaneous investment.

While there can be no question of the importance to our economy as a whole of capital expenditure in the fuel and power industries, nevertheless a substantial contribution can be obtained there. So far as possible, the necessary cuts will be made at the expense of longer term projects.

In education there will be some slowing down of our advance. We shall maintain the progress of school and technical college building, securing the necessary savings by reducing costs and postponing the expansion of the school meals service.

In the case of the housing programme, which will be reduced by some £35 m. a year, the Government will see that the reduction in the number of new authorisations is made in accordance with a proper regard to priorities.

By reducing the number of licences issued for the erection of houses by private persons we shall secure that the local authority programme for the building of houses to let can proceed without any marked reduction.

In order to ensure that the labour and materials saved on the main programme do not drift into unessential works, we shall tighten up considerably the general control of building, which, with certain other measures, will enable us to make a further saving of about £35 m. in the miscellaneous category.

Mr. Attlee said that besides the reductions in existing services the Government had considered services not yet in operation. It was proposed to defer the introduction of certain parts of the legal aid scheme and to reduce by £1 m. the estimated cost of the Festival of Britain.

After Mr. Attlee's announcement, MR. DEREK WALKER-SMITH asked: As the reduction in the housing programme is to be achieved without any reduction in local authority building, which is the less economical kind of the two forms of housing, would the Prime Minister say what measures have been concerted or considered for effecting economies in local authority building costs?

MR. ATTLEE: All those matters are really matters for debate.

STATEMENT BY NATIONAL FEDERATION

Cuts equivalent to 20,000 Houses

THE following was issued by the National Federation of Building Trades Employers after Mr. Attlee had made his statement on the cuts in the House of Commons.

"The decision in regard to housing amounts to a reduction of more than 20,000 houses a year in the total housing programme of some 180,000. Although it is not clear at the moment how the cut will operate in practice, it seems that it will fall mainly on the already small programme of houses—less than 20,000 a year—being built for sale or letting privately under very strict conditions. This is a blow not only to the building industry but to the middle class families with needs as pressing as those of any other class, who have wanted for many years to buy new houses of their own instead of becoming tenants of municipal housing estates.

"The decision is, therefore, quite unsound economically because the cut is being applied to the very houses which do not cost rates and taxes a pennypiece; because money which would otherwise have been spent on houses, which are capital assets, is now likely to be spent on consumable goods and because large numbers of families will be forced to buy existing houses at prices even higher than those ruling at present, which in their turn are considerably above the price of new houses.

"What is meant by further reduction of 35 million pounds a year by 'general control of building' is not known. Whatever form of new building or of repair and maintenance of existing buildings it applies to, it is clear that the apparent overall cut of 70 million pounds means a reduction in the industry's labour force. But building workers, as the experience of the Government has shown in the past, cannot readily be transferred to other industries. The building industry's labour force is unbalanced now; there is a shortage of labourers and as the majority of the craftsmen are to be found in the higher and therefore less mobile age groups, a reduction in numbers of either labourers or mobile craftsmen can only come from the ranks of the younger workers, which would have the most serious effects on the industry."

COMPETITION NEWS

War Memorial Buildings, Jersey

THE Association of Old Victorians invites architects of British nationality to submit designs in competition for proposed war memorial buildings in the form of a small Art School at Victoria College, Jersey, C.I. The assessor, nominated by the President, R.I.B.A., is Mr. A. E. O. Geens, F.R.I.B.A. The premiums will be £75, £50 and £25. The last day for submitting designs is April 3, 1950.

Conditions of the competition may be obtained on deposit of £1 from Mr. A. H. Worrall, Hon. Treasurer, The Association of Old Victorians, 25, Cleveland-road, Jersey, C.I.

Mental Colony, Co. Antrim

THE Northern Ireland Hospitals' Authority is to hold an architectural competition in connection with the proposed £1,000,000 mental colony building at Muckamore, Co. Antrim, Ulster. The competition is being organised in conjunction with the R.I.B.A., and a first premium of £5,000 will be awarded for the winning design.

COMPETITIONS OPEN

VICTORIAN WAR MEMORIAL. Promoted by Trustees of Victorian National War Memorial. Premiums: £1,000, £500 and £250. Assessors: Mr. R. S. Demaine, F.R.A.I.A.; Mr. Marcus W. Martin, F.R.A.I.A.; and Mr. W. Balcombe Griffiths, M.C., A.R.A.I.A. Conditions from Agent-General for Victoria, Victoria House, Melbourne-place, Strand, London, W.C.2. Closing date: Oct. 31, 1949.

VERTICAL FEATURE FOR FESTIVAL OF BRITAIN, 1951. For erection on River Embankment. Premiums: £300, £150 and £100. Assessors: Presentation Panel of the Festival of Britain. Conditions from the Secretary of the Presentation Panel, "Festival of Britain, 1951," 2, Savoy Court, W.C.2. Closing date: November 1, 1949.

RESTAURANT FOR FESTIVAL OF BRITAIN, 1951. On the South Bank site. Premiums: £250, £200 and £150. Assessors: F. R. Furneaux Jordan, F.R.I.B.A.; Misha Black, O.B.E., F.S.I.A.; Hugh Casson, M.A., F.R.I.B.A., N.S.I.A.; Mark Hartland Thomas, M.A., F.R.I.B.A., N.S.I.A.; and Ralph Tubbs, A.R.I.B.A. Conditions from Secretary of the Presentation Panel, "Festival of Britain, 1951," 2, Savoy Court, W.C.2. Closing date: November 7, 1949.

FLATS FOR YORKSHIRE FESTIVAL. Promoters: the York Festival Society. Premiums: £250, £150 and £75. Assessor: Mr. W. A. Eden, M.A., F.S.A., F.R.I.B.A. Conditions from Mr. Keith Thomson, Artistic Director, York Festival, 1951, 1, Museum-street, York. Deposit: £2 2s. Closing date: January 18, 1950.

COMMUNITY CENTRE. Promoted by Incorporated Association of Architects and Surveyors, for designs for a rural or urban community. Prizes: Urban Design: £150 and £75. Rural Design: £100 and £50. Assessors: Mr. G. Bertram Carter, F.R.I.B.A., F.I.B.A.; Councillor William J. Clark, F.I.A.S., F.R.S.A.; Mr. Richard Clements, O.B.E.; Mr. Kenneth J. Lindy, F.R.I.B.A., F.I.A.A.; Mr. H. Anthony Mealand, F.R.I.B.A., M.T.P.I., A.M.I. Struct.E.; and the Dowager Marchioness of Reading, D.B.E. Conditions from the Secretary, I.A.A.S., 75, Eaton - place, S.W.1, on payment of 2s. 6d. for site plans. Closing date: February 1, 1950.

SECONDARY SCHOOL, HUNSTANTON. Promoted by Norfolk Education Committee. Premiums: £500, £250, £150. Assessor: Mr. Denis Clarke Hall, F.R.I.B.A.. Conditions from Mr. W. O. Bell, Chief Education Officer, Norfolk E.C., Stracey-rd., Norwich. Dep. £2 2s. Closing date: February 28, 1950.

HALL OF RESIDENCE, UNIVERSITY OF NOTTINGHAM. Promoted by Council of the University of Nottingham. Premiums: £1,000, £750 and £500. Assessor: Sir Percy Thomas, O.B.E., P-P.R.I.B.A. Conditions from the Registrar, The University, Nottingham on deposit of £2 2s. Closing date: March 11, 1950.

PUBLIC HALL AND RESTAURANT, WHITEHAVEN. Promoted by Whitehaven Corporation. Premiums: £300, £250 and £175. Assessor: Mr. Harold A. Dod, M.A., F.R.I.B.A. Conditions from Town Clerk, Town Hall, Whitehaven, Cumberland, on deposit of £2. Closing date: March 15, 1950.

CIVIC HALL, GUILDFORD. Promoted by the Borough Council. Premiums: £1,000, £500 and £250. Assessor: Mr. G. A. Jellicoe, F.R.I.B.A. Conditions from the Town Clerk, Municipal Offices, Guildford, on payment of deposit of £2 2s. Closing date, April 30, 1950.

View looking east, showing Queen Anne's Ride crossing the road in the background. Cottages in the background are an asymmetrical pair of the three-bedroom type.

THE VILLAGE, WINDSOR GREAT PARK

SYDNEY TATCHELL, SON AND PARTNERS, ARCHITECTS

The village shop and a three-bedroom pair of houses. Existing cottages may be seen in the background.

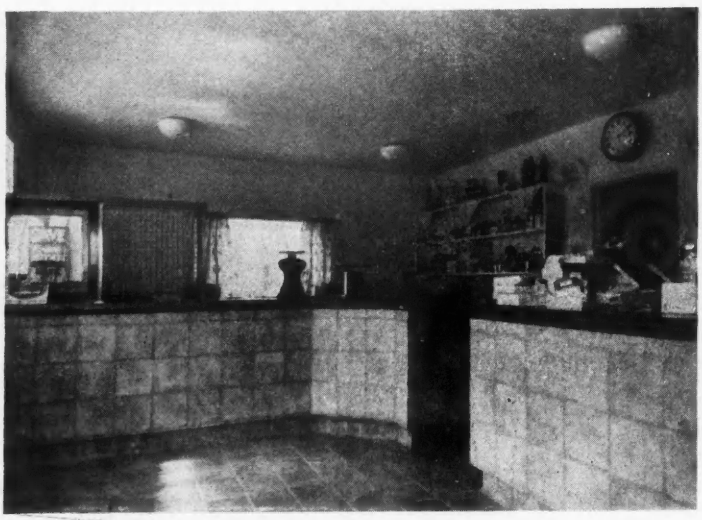
The village shop from the south-east.

THE village group consists of 28 cottages in pairs and a general store which also serves as a sub-Post Office.

The cottages are sited on a new " Y "-shaped road immediately to the west of Queen Anne's Ride near Prince Consort's Workshops, on a site known as Richardson's Lawn, and were erected to accommodate local employees of the Crown Estate.

Four types of cottages are provided—three with three bedrooms and one with a fourth bedroom on an attic floor. All cottages have a sitting room, kitchen/living room, scullery, upstairs bathroom and w.c., a second w.c. on the ground floor, a bicycle store and, in addition, a detached tool shed and chicken house. The " A " type has a weather-tiled or elm weather-boarded upper storey; the " B " type has a "through" living room and can be sited in almost any aspect; the " C " type is an asymmetrical pair, one half being in effect a modified " A " type; the " D " type is intended for larger families and has a fourth bedroom.

External wall finishes consist of multi-coloured hand-made facing bricks, stock bricks or Cullamix " Tyrolean " rendered finish in white, cream or oyster pink, while roofs are generally covered with red or dun-coloured hand-made tiles. In two instances slates from the Crown Rhos Quarries in Caernarvon are used in conjunction with a stock brick. Metal casements and external woodwork generally are painted pale ivory; the external doors and jalousies, however, are painted grey-green, dull blue, turquoise blue or maize yellow.

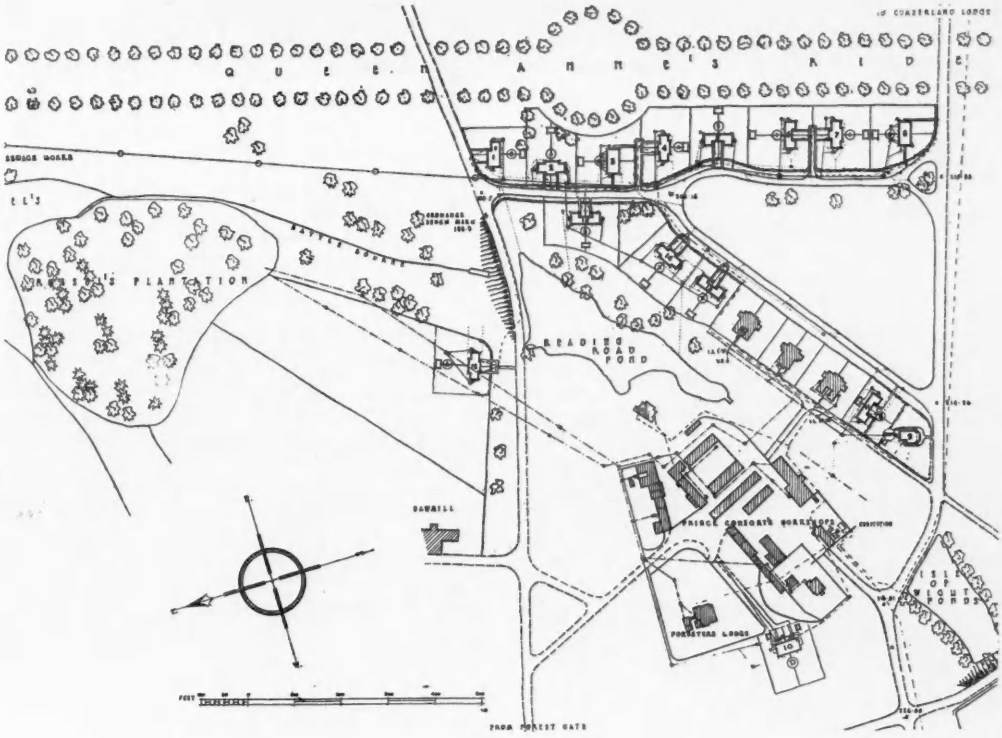


Interior of the village shop.

Each living room is provided with an Interoven, which also supplies domestic hot water. A thermostatically-controlled immersion heater is also provided as a boost and for summer use. Cooking is carried out by means of the Interoven and/or an electric cooker provided by the tenant.

Floors to ground storeys are of pitchmastic—those to upper storeys being wood boarded with cork-tiled floors to bathrooms. The floor and counter front to the shop is in pressed cement tiles in a buff and dull yellow respectively. The counter itself is surfaced with " Holoplast " with a teak nosing.

The subsoil being heavy clay all surface water had to be piped away



The layout.

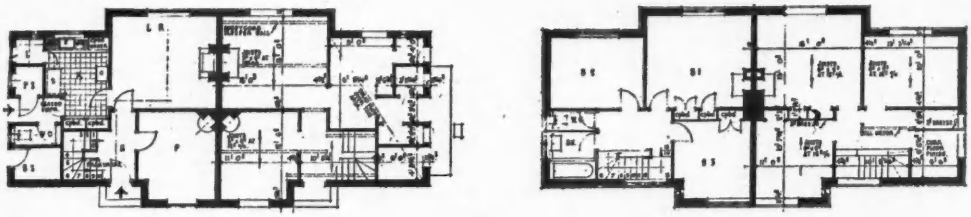
to Russell's Pond to the north of the site, and for the same reason foundation and surface concrete was reinforced. Soil drainage is taken away to a new sewage disposal plant also to the north of the site.

The architects, appointed by the Commissioners of Crown Lands, were Messrs. Sydney Tatchell, Son and Partners.

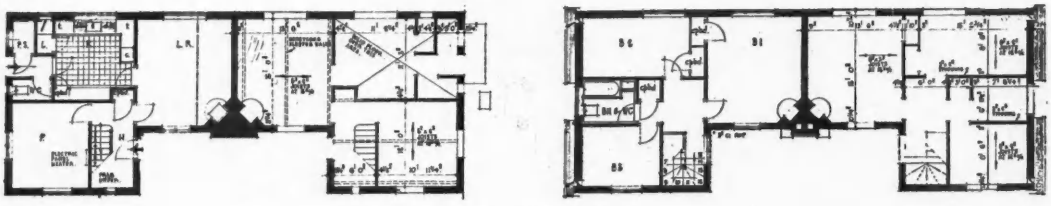
The quantity surveyors were Messrs. Gardiner and Theobald.

The general contractors were Messrs. Y. J. Lovell and Son, Ltd.

Detail of the shop front.



COTTAGE TYPE A



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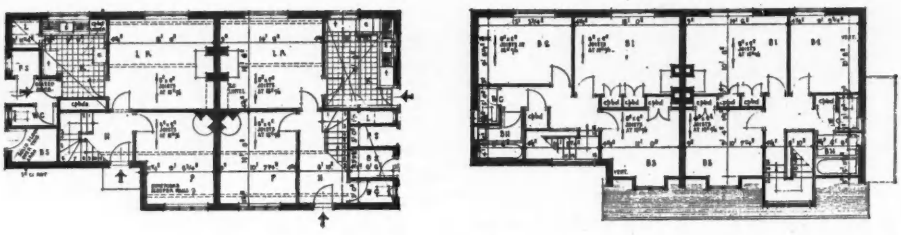

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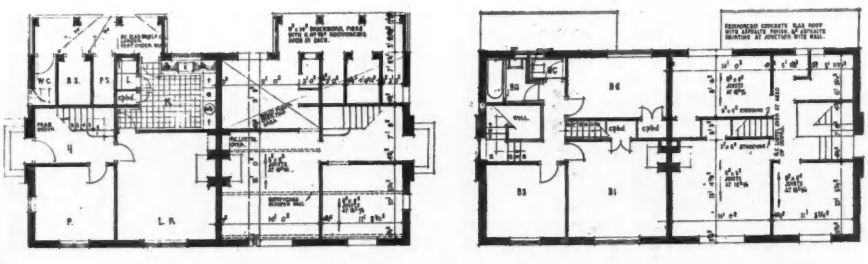

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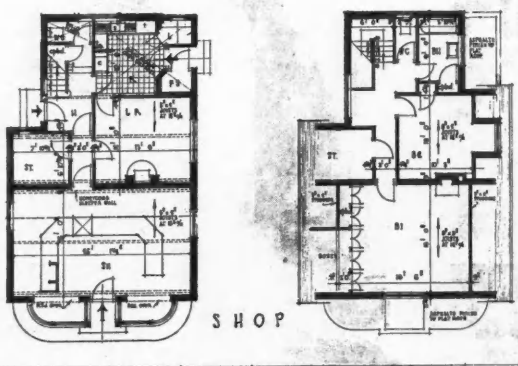


THE VILLAGE, WINDSOR GREAT PARK. **Cottage type plans.**

A general view from the south showing four-bedroom-type houses in the foreground.

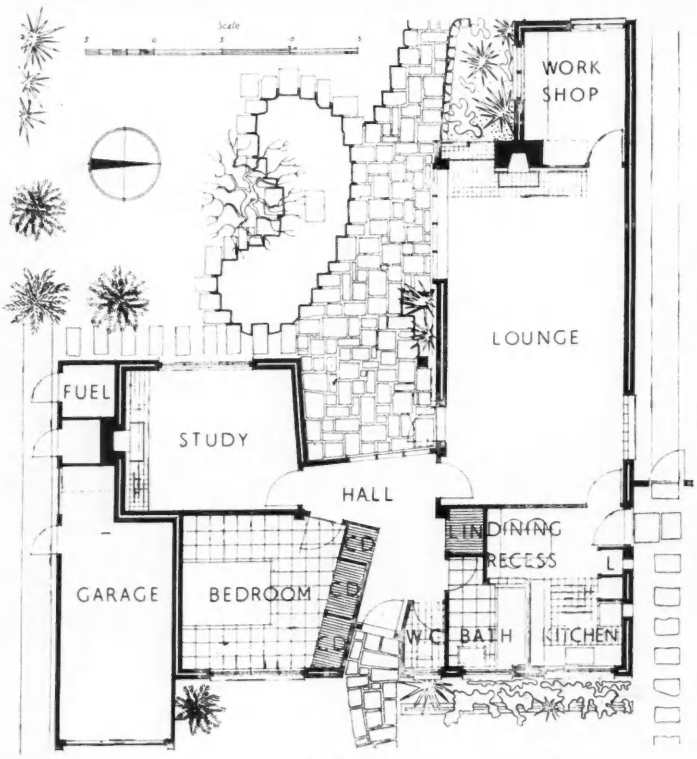
The sub-contractors included J. Alfred Pratt and Co. (1928), Ltd., bricks and tiles; Joinery and Builders' Supplies, Ltd., " Multigon " flush doors; The Crittall Manufacturing Co., Ltd., metal windows; Peerless Built-In Furniture, Ltd., kitchen fitments; Interoven Stove Co., Ltd., interovens; Bratt Colbran, Ltd., fireplaces; John Bolding and Sons, Ltd., sanitary fittings; Yannedis and Co., Ltd., door furniture, ironmongery, etc. ; Carter and Co., London, Ltd., wall tiling; Jacob, White and Co., Ltd., electrical work; F. H. Keating, plumbing; Sparkes Bros., Ltd., roads and paths; and Howard Humphreys and Sons, drainage consultants.

The clerk of works was Mr. E. A. Wilkins.

A general view from the Green. The cottage in the foreground has a slated roof and stock-brick wall.

The front elevation.

SINGLE-STOREY HOUSE AT PURLEY, SURREY



The plan.

DESIGNED BY R. R. HAGGARD, A.M.I.C.E., A.M.T.P.I., AND L. W. COOK, A.R.I.B.A.

THIS house at Purley has been built with the aid of the "Hyspecon" walling machine which is designed to construct monolithic concrete wall with or without a continuous cavity, by forming a temporary framework for sections of walling approximately 2 ft. 6 in. long. (A detailed description and illustration of this machine were given in *The Builder*, February 27, 1948.)

The total length of external concrete walling of the house is 120 ft. In addition to this, small lengths of the external walls are in glass (floor to ceiling) and face brickwork. The only internal load-bearing wall, 14 ft. in length, was also constructed with "Hyspecon" machines. The height of the walls is 7 ft. 6 in. from d.p.c. to wall plate. This is constructed in ten 9-in. courses. Lintols are precast.

Foamed slag, obtained in coarse ($\frac{1}{2}$-in. to $\frac{1}{4}$-in.) and fine ($\frac{1}{8}$-in. dust), sharp sand and ordinary Portland cement were the materials used, the mix, in the same order, being 4:2:1$\frac{1}{2}$:1 by volume.

Labour was provided by four labourers, two operating a machine each, one on the mixer, and the fourth wheeling ordinary barrows from the mixer to the wall. Three barrows were used.

The walling was constructed at the rate of one course a day. It is not possible to construct two courses a day using lightweight aggregates and ordinary cement, as the strength attained by a section of walling in, say, four hours is not sufficient to support the machines. It is, however, possible to construct two courses a day using stone aggregate, or using lightweight aggregates with rapid-hardening cement.

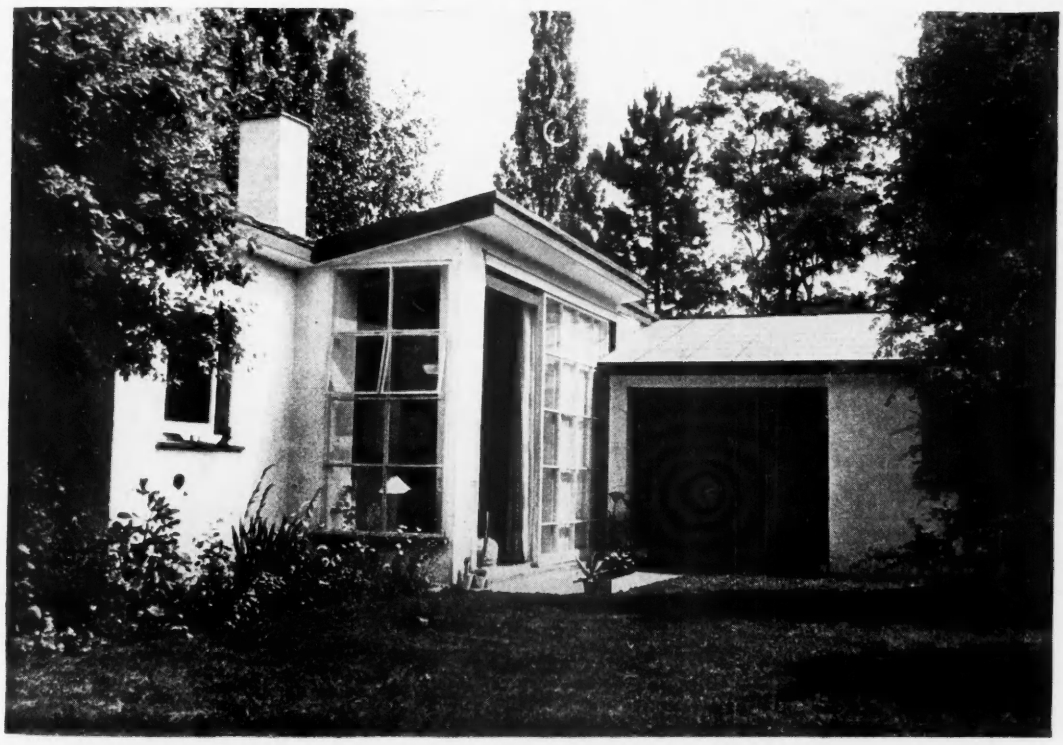
The house was therefore completed in ten working days, with two or three days intervening due to bad weather. The men were employed on the walling for an average of 2½ hours a day, the rest of their time being spent on drains, etc.

One scaffolding lift only was used, at a height of 4 ft. 6 in. The first four courses were run from the ground, the fifth course from planks resting on 12-in. high blocks, the rest from the scaffolding. When operating on the scaffold, the material was tipped out of the mixer on to a wooden platform raised 15 in. above ground level. From this it was shovelled direct into the barrows standing on the scaffold. No ramp or hoist was used.

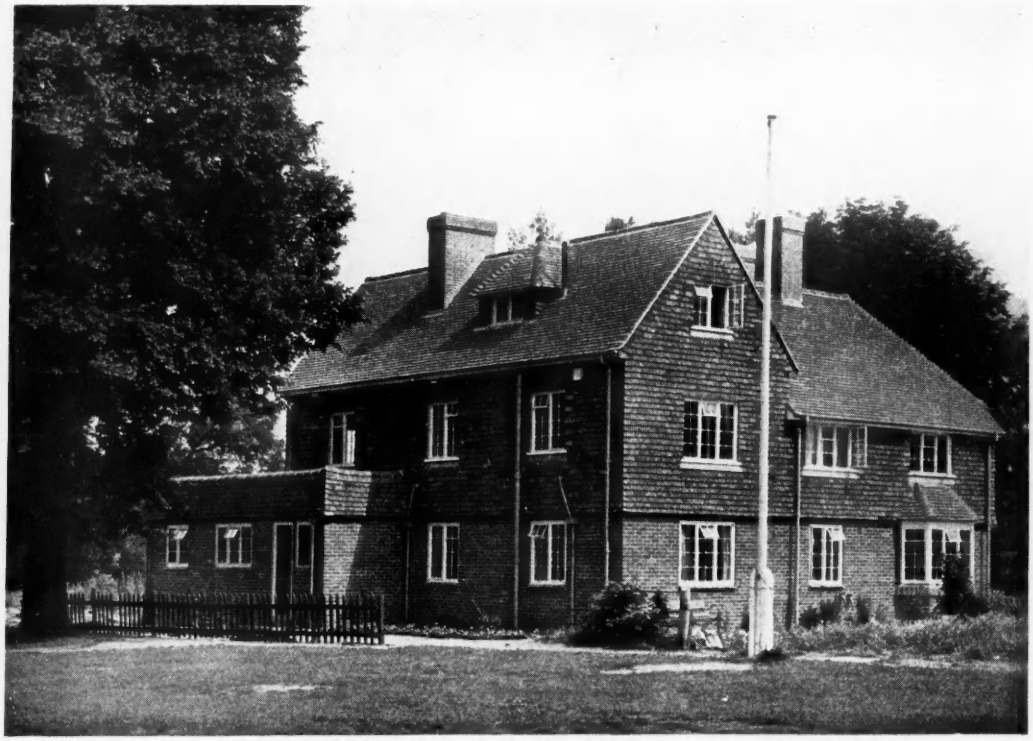
It is estimated that the cost of "Hyspecon" walling is at its lowest where: (a) the walling is in straight runs uninterrupted by window openings; (b) the number of corners, which take twice as long as straight walling, is kept to a minimum.

The average for the cavity walling on the whole of the house was 7.6 feet super per man hour. Assuming 2s. 6d. per hour for labour, this means that the labour costs for the 9-in. walling average 4d. per foot super.

Interior of living room.



The garden elevations.



REBUILDING OF THE MANOR, FOREST SCHOOL, SNARESBROOK

SEARLE AND SEARLE, F. AND A.R.I.B.A., ARCHITECTS

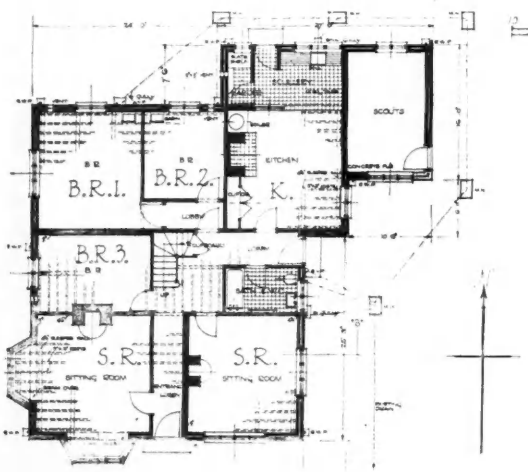
THIS house was built on the site of the old Manor destroyed by enemy action in 1944. The house adjoins Forest School, on the fringe of Epping Forest, and provides residential quarters for the school teaching staff.

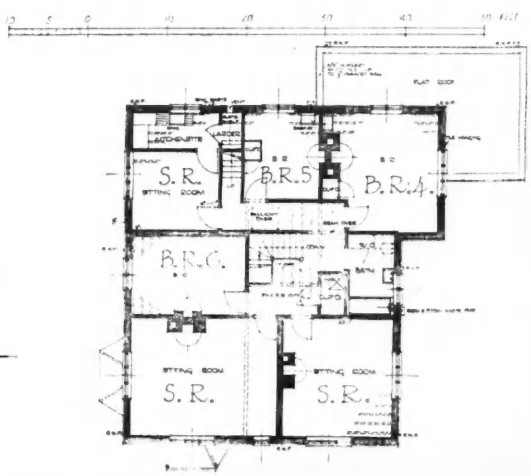
The destroyed "Manor" ranked for a cost of works payment and the War Damage Commission contributed substantially to the cost of rebuilding, which amounted to £6,300. The house, which is of traditional construction, has 11-in. hollow walls to ground floor faced with "Canewdon" Essex stock facings and pointed up in gauged lime mortar. The upper walls are 9-in. solid, faced with Old English hand-made sand-faced tiles. Similar tiles are used on the roof. Standard metal windows in wood surrounds were used throughout the building.

Internally the building has the normal joisted and boarded floors. Plastering to walls is finished with a wood float and distempered, except to kitchens and bathrooms, which are painted. All internal joinery is painted with the exception of doors, which are stained and polished. Hot water is provided by means of back boilers and Ascot heaters.

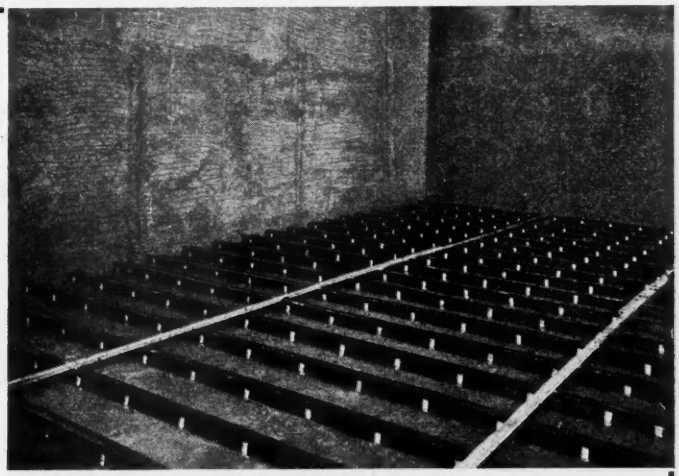
The quantity surveyors were Messrs. Crosher and James, FF.R.I.C.S., and the general contractors were Messrs. E. Fuller and Sons (Fullers (Builders), Ltd.), of Walthamstow.

The principal sub-contractors were :—Windows, Crittall Manufacturing Co., Ltd. ; electric light, E. Sired ; ironmongery, Nicholls and Clarke, Ltd. ; plastering, Tomei, Ltd. ; and sanitary fittings and fireplaces, H. and C. Davis and Co., Ltd.





This is what we mean by a SOUND FLOOR



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THE SCOTTISH TRADITION IN ARCHITECTURE AND BUILDING

Mr. Lockhart Hutson's Address at Building Research Conference

AN account of the historical and economic influences affecting the Scottish tradition in architecture and building was given by MR. LOCKHART W. HUTSON, O.B.E., F.R.I.B.A., President of the R.I.A.S., at the recent Building Research Conference held in Glasgow in connection with the opening of the Building Research Station's Scottish Laboratory at Thorntonhall.

Mr. Lockhart Hutson began by saying that tradition was not to be confused with "style," for what were architectural styles but fashions which had their day and passed. Tradition remained, at times more conscious, at others more unconscious in its influence; it endured, and must continue to endure, so long as the workers of each succeeding generation learned their work from those of the preceding one, be it in workshop, studio, college or office.

"If we regard tradition in this sense," he continued, "the study of it in the light of modern requirements and techniques should result in the creation of an architecture which is indigenous, which has been evolved out of known conditions, an architecture which belongs to us, not something, however good, imported from another country where it has grown, in all probability, out of partly or wholly different conditions. This is not a plea for a revival of 'turretted' architecture; it is an appeal for modern architecture worked out in a Scottish atmosphere, something which can be much more easily demonstrated or illustrated than described . . . work containing that elusive something which marks it at once as a product of the 'land of brown heath and shaggy wood,' the kind of work carried out by the late Charles Rennie Mackintosh in that 'tense' masculine, manner for which unfortunately, he was much better known abroad than in his own country, or more recently, some of the work carried out between the two wars by younger men of the Edinburgh School.

Influence of History on Art.

"If we were concerned to understand Scottish architecture as an art, we would begin by relating the story of its buildings to its history. We would examine the evidence of those early works of fortification—the brochs—great circular walls of stone built without mortar, sometimes almost 20 ft. thick and up to 60 ft. high surrounding a courtyard of about 40 ft. in diameter. We would trace through the rough and vigorous sculpture and stone carving of the Islands, the gradual welding of five provinces—Anglican Benicia; Irish Dalriada or Argyll; Celtic Strathclyde; Pictland and Norseland, the settlements chiefly in the Islands—into the Scottish realm. The turbulent religious life of the Scottish people would be our special concern. We would find that Scotland, like every other European country, had followed the general trend of Gothic architecture from Norman onwards. Despite the comparative sparseness of the examples, we would find that in few, if any, other countries in Europe was this great and glorious architectural style adapted so successfully to the physical or cultural background of the country.

"Using the materials to his hand, local whinstone, sandstone or granite and little else, the mediæval Scottish mason produced an architecture which was essentially masculine, depending for its effect wholly upon pleasing proportions and usually massive form. With the sunset of Gothic followed by the dawn of the Renaissance, however, the independent Scottish contribution to contemporary architecture waned considerably for, instead of concentrating upon developing a phase of the new style indigenous to Scotland, many Scottish architects took a leading part in moulding the form of English Renaissance."

The speaker then commented upon pre-Norman work in Scotland up to the twelfth century. Nothing remained of the pre-Norman buildings and it was likely that the building of castles with stone and lime, as opposed to the earlier "dry" building, was introduced into Scotland by the Normans. It was remarkable that while substantial remains of some fine specimens of ecclesiastical architecture of the twelfth century remained, there was not one example of the civil, military or domestic architecture to be found. It was likely, therefore, that even at the twelfth century the castles of the noblemen consisted chiefly of earthworks with wooden palisades or rough walls of uncemented stone.

The first period of castle building, using stone and lime, did not commence in Scotland until the thirteenth century, and evidence remained to indicate the general plan—a roughly quadrilateral enclosure with shape varying to suit the contours of the ground, surmounted by walls seven to nine feet thick and 20 or 30 feet high, with square or round towers in the angles.

The Influence of the Peel Towers.

With the invasion of Scotland by Edward I in 1296, there began a much less settled period when the country was not in a condition to engage in extensive building operations. In addition, the war strategy of Robert the Bruce and others was opposed to the building of large castles which, however useful in the hands of the Scots, were apt to offer equally valuable strongholds for the English.

Being deprived for the reasons already given of an opportunity of building large castles, the nobility of the fourteenth century were impelled to be content with the simplest form of stronghold sufficient for themselves and their personal retainers to protect themselves from sudden attack. The square towers or Norman keeps which had become familiar to the Scots on their frequent invasions of the northern counties of England naturally became their models.

These Peel Towers, as they were called, were built in great numbers throughout the country, and from them there issued in direct descent the Scottish Domestic tradition of the three succeeding centuries.

The Peel Tower, in its simplest form, was square or rectangular on plan and three or more storeys in height.

The ground floor, used as a store or a stable for horses and cattle, was invariably vaulted, with a plain barrel or tunnel vault to carry the principle first floor, while an upper floor or loft for the domestics was often formed in the vault by the insertion of a wood floor, whose supporting beams or joists were carried on stone corbels projecting from the walls. The first floor, which formed the Great Hall, was often approached from the ground by a movable ladder or stair. This floor, like the one below, was also vaulted, and often had an upper floor of wood within the vault. Above, on the second floor, were the private apartments of the lord and his family, with an upper chamber either formed in the roof or vaulted to carry the roof. These upper floors were reached by stairs within the thickness of the wall, continuing the tradition already noted. The roof, sometimes flat, was more often steeply pitched and covered with stone slabs well dressed and grooved into one another, and was surrounded by a gutter, also dressed stone, each alternate stone having a drain through the parapet wall with a projecting gargoyle.

The chimney stacks were carried up on the inside face of the thick walls to allow a free parapet walk all round for defensive purposes.

The parapet, in early examples carried straight up on the main wall face, was later often corbelled out to give a greater width of defence walk, and this became, with the corner bartizans or unroofed turrets provided at the angles of the buildings, the chief distinguishing mark of the Peel Tower, the remainder of the walls being plain stone, with the minimum number of openings.

The Graftings of Civilisation.

Such was the prototype of the best period of Scottish domestic architecture from the fifteenth to the seventeenth centuries. On to this simple Peel Tower there were grafted certain developments arising from the growing requirements of their various owners as they progressed first in knowledge of defensive warfare and later in ideas of civilisation and comfort.

From such conditions sprang the added salient wing with resultant re-entering angle and L-shaped plan; the double salient or Z plan; the projected battlement carried clear of the wall by stone corbelling, with corner extensions in angle bartizans; turnpike stairs, one or more, in independent turrets, the vertical corridors of the time as opposed to our horizontal ones of to-day; the high-pitched and gabled roof, its side walls either carried up direct from the line of parapet or with it, to provide additional rooms, and the dormer windows to give light to these. And in Scotland, from the earliest instances and onwards, the roof always sloped on two sides only, for the other two walls were carried up as gables—possibly owing to the simpler construction involved in the formation of chimney flues requiring of necessity to be raised above the roof-line. The bartizans or turrets being, from their position, left outside of the general roof-slope, were covered independently in conical or pepper-box form. The corbie or crow steps, though no doubt found convenient by these birds, were, needless to say, not provided for their accommodation, but were a simple constructional expedient for finishing the slope of the gables above the roof with small and easily transported stones in contrast to the longer and heavier ones required for a weather-tight finish on a smooth slope.

Such were the simple elements which composed the type of dwelling house throughout Scotland by the close of the fifteenth century and persisted with many variations till the eighteenth century and the advent of the Renaissance. The variations in the best examples consisted of the gradual shedding of such details as had devolved from the defence requirements of earlier, more warlike, days, the parapet and the bartizans and the retention of the simple forms, the plain wall surfaces and well-proportioned win-

dows which gave such simple dignity to the structures and above the steep-pitched roofs and gables, the dormers, the prominent chimney stalks which provide such delightful sky lines.

With the coming of the Renaissance the emphasis on building moved to a large extent from the country to the towns. With the change, Scotland's contribution to contemporary architecture was much less clearly distinguished from similar work in England than in the previous epoch. Civic buildings and monuments apart, the most notable examples of our Renaissance Domestic Architecture, are to be found in the City of Edinburgh where the foresight of the city fathers in planning the "New Town" was rewarded, if not with great architecture, with terraces of houses of simple dignified design.

The twentieth-century contribution to domestic architecture is well known. Beginning with activity in tenement building—the speculator driven from this field by legislation which made house-building and letting uneconomic—the first war with its stoppage of building and the almost feverish attempts during the interim period to make up arrears are all fresh in our memory. As the time goes on, we see that in the two decades 1919-1939, a great opportunity was missed, for although many improvements were made during that period in the internal planning and equipment of our houses, the architectural design left much to be desired. It may be that the architect must accept some responsibility for this failure to grasp his opportunities, but we can only produce the architecture demanded by our clients and I suggest that there are two main deterrents to the desired architectural achievement: the first, Treasury control; the second, the almost universal demand for the semi-detached house with its own garden, preferably enclosed by a fence.

I regard the insistence on semi-detached blocks, however, as by far the more important of the two factors affecting inter-war and present-day design of houses.

The Stone Tradition.

There can be no doubt that in Scotland stone is the material which harmonises most successfully with the rugged pictorial background of the country. We have a unique stone tradition, this material being used virtually to the exclusion of any other until the latter half of the nineteenth century. In the beginning, of course, its use arose from the economic necessity to employ the materials at hand, for Scotland is geologically a stone country.

Whether from the limitation of the tools used in quarrying or the circumscribed nature of the deposits, or perhaps most likely the need for the utmost economy in a poor country, the early use of stone was almost always in the form of rubble, so that waste was entirely eliminated, and incidentally the use of stone in this manner gave a delightful variety and scale to the buildings.

In later days, with the introduction of mechanical methods, some of the quarries, notably the red sandstone of Dumfriesshire, unfortunately perhaps the least pleasing of all our sandstones, produced large quantities of ashlar in high courses, and many of the late nineteenth- and early twentieth-century tenement houses in the West were built of this material.

It must be a matter of great regret that, with the introduction of brick, with its relative cheapness, the stone-quarrying industry in this country has been reduced almost to extinction.

Stone building presented amazingly few problems to the early builders; it was usually built in fairly thick walls even after the need for military protection was removed. The wall consisted of an outside face and a rougher inside face with the intervening space filled with "shivers" and mortar forming an excellent vertical damp course and insulator.

The principal defects probably consisted of a sparsity of adequate tie or bond stones between the outer and inner faces and, in the early days, failure to realise the need for a horizontal damp-proof course at the ground level.

The external face of the stonework was very often hammer dressed, giving an excellent and appropriate finish, more particularly in random rubble. The use of harling, however, was quite frequently resorted to. It consisted of a mixture of sand grit or gravel mixed with lime and thrown in a semi-fluid state on to an undercoating of coarse stuff. This finish formed a ready precedent for the use of the now universal rough-cast when the era of bricks and cement eventually arrived.

Used on the old roughly built stone walls, however, harling gave a variety of surface and a mellow feeling unobtainable on the more rigid hard lines of brick surfaces.

A very few brickworks in Scotland, probably not more than six, excavate clay specifically for brickmaking, and it is possible that these were among the earliest of our brickworks. The bulk of brickmaking came with the development of coal mines, when it was found that certain types of shale necessarily taken out with the coal were suitable for grinding, shaping and burning, the latter process incidentally necessitating an extraordinarily small amount of added fuel because of the amount of carbon already present in the material.

By its nature and the accident of its winning, this raw material for brick making in Scotland is of very varying quality. Consequently, the bricks produced in Scotland are not of a high standard æsthetically and they came to be used not for their own value as in a traditionally brick country like England, but as a substitute for stone as a base for harling, rough-cast or other external finish.

Traditionally the mortar used in this country was lime, but with the coming of the brick era with its thin walling, cement has been used to a very large extent, with the result that many limeworks in Scotland have gone out of existence. In this field the Building Materials Committee of the Scottish Council (Development and Industry) has been active, and with the knowledge that much more elastic, and therefore better, mortar can be made of a lime, cement and sand mixture, it is to be hoped that success will attend their efforts.

Lime plaster held first, or, indeed, the only, place among materials for internal finishing until the advent of the more modern "hardwall" plaster; this latter derived from gypsum, of which there are no known deposits in Scotland. Plaster was frequently applied direct to the stonework with unsatisfactory results where the middle third of the wall did not form a wholly efficient damp-proof course. Thereafter it was applied to laths nailed to battens or straps fixed to the wall with dooks, a practice almost invariably followed whether on stone or brick walls until the cavity brick wall was introduced, thus allowing the plaster to be applied directly to the internal surface of the brick.

Roofs.

The early Scottish roofs were almost invariably steeply pitched and covered with stone slabs, a roof which æsthetically can hardly be equalled. Obviously the timbers required to carry such a covering were considerable, and the slate industry in Scotland developed fairly early. Slates then came to be regarded as the normal roofing material except in the east coast districts of the Lothians and Fife, where the manufacture of clay pantiles was a thriving industry in the very early nineteenth century. They made delightful roofs.

The slates used in Scotland were of random sizes varying in length and width down to quite small sizes. The slates were also much thicker than those in use in the South. The resulting roofs were of a rugged texture in keeping with the stonework of the walls and also with the Scottish background.

Two other results followed upon the use of random-sized small slates, (1) the use of roof boarding or sarking in place of slate battens originally used, no doubt, in order that a fixing for slates could be obtained at any point of the roof, and later regarded as necessary for roof insulation, (2) the use of a sheathing felt to assist in "bedding" the small slates and providing a barrier against driving snow. This has also been regarded as an essential part of Scottish roofing practice.

Apart from the early pantiles of the Lothians and Fife already mentioned, Scotland has not produced any clay tiles, with the result that when economy dictated the use of tiles in place of slates, these were imported from North Staffordshire and other districts in England, and later from the Continent. It is doubtful if commercial clay tile production could be successful in Scotland even if raw material were found owing to the difficulty of obtaining an even burning of the intensity necessary to produce tiles capable of withstanding our cold, wet winter climate.

As with slates, so with tiles; the Scottish practice of using timber sarking and felt has continued—now, of course, frankly used for insulation purposes since the need for providing the nail hold at any point has ceased to exist. It should be noted that the traditional steep-pitched roof has proved an advantage when clay tiles have been used and, judging by the disastrous results where builders have been misguided enough to use tiles on flat pitches, the steep pitch can be regarded as essential in combination with this material.

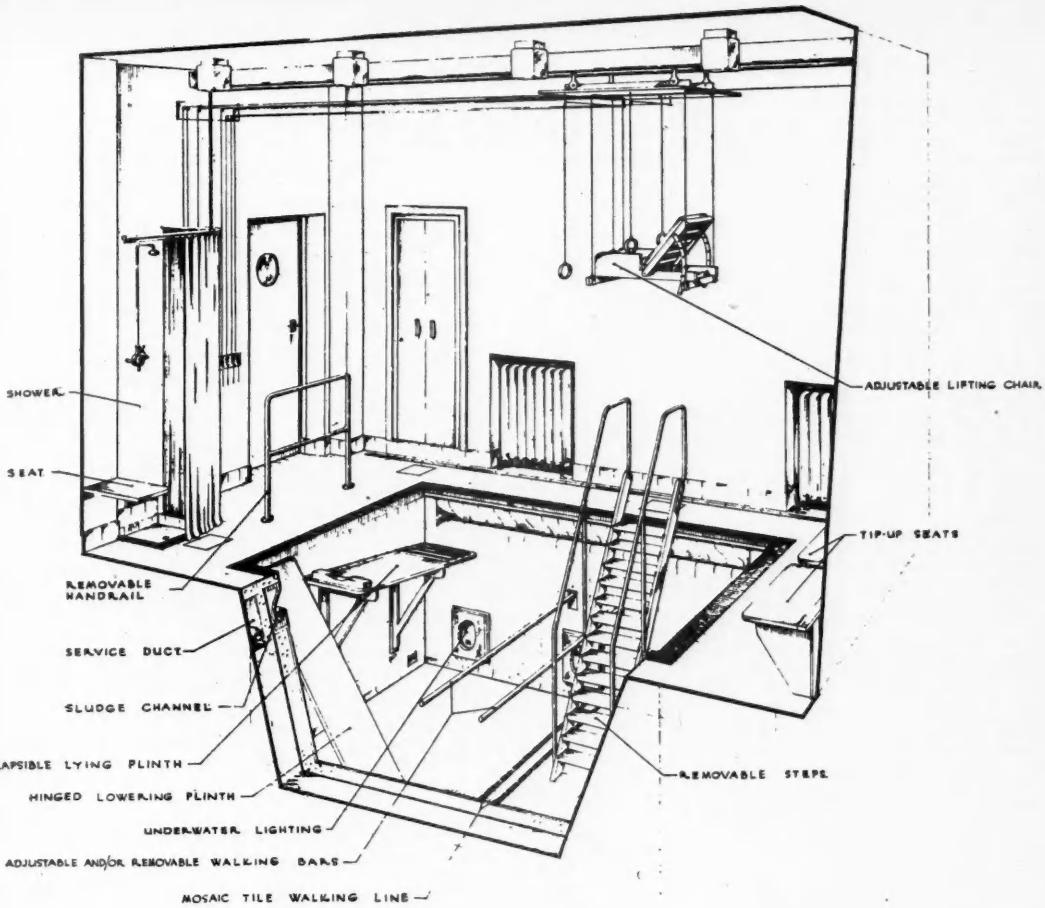
Floors.

The earliest floors in Scotland, as elsewhere, were no doubt of clay or pisé.

We have seen, however, that early domestic structures had upper floors supported on stone vaults on which stone slabs were doubtless used as a surfacing material and also timber-boarded floors supported on wood beams or joists carried on corbels.

The generations have brought little change in flooring techniques. Stone slabs continued to be used until late in the nineteenth century, and boarded floors of imported timber were accepted practice in pre-war days.

These were the traditional flooring materials, and I know of no departure from these (if we accept the substitution of imported softwood for the native timber originally used for boarded floors) until the introduction of the floor surfaces based on Portland cement, i.e., granolithic and terrazzo.



PHYSIO-THERAPY AT OSBORNE HOUSE

New Hot Pool For Paralysis Treatment

THE Ministry of Works has installed a Hot Pool of new design at Osborne House, formerly the home of Queen Victoria and now the King Edward VII Convalescent Home for officers of the Services.

The pool has been constructed within the former Orangery and, as will be noted from the accompanying perspective sketch, has the following special fittings:—*Lifting Chair* with adjustable back, operated by pulley tackle suspended on a sliding track fixed to ceiling; *Lowering Plinth* hinged to wall of pool (shower bath end), operated by pulley tackle attached to ceiling (not shown in sketch); *Lying Plinth* with removable top. Supporting brackets are hinged to fold back against pool wall; *Sitting Plinth* (not shown in sketch) hinged to fold back against end wall near steps; *Walking Bars.* These adjustable and removable chromium-plated bars are centred on double "walking lines" of black mosaic tiles inset in the floor of the pool. *Step Ladder.* Removable, with handrail each side.

The room in which the pool is situated is heated by hot water radiators designed to maintain a temperature of 80 deg. F. The pool, which has a water capacity of 3,000 gallons, measures 14 ft. by 8 ft. 7 in. by 4 ft. 9 in. deep, the depth of water being 3 ft. 11 in. The water temperature is maintained between 95 deg. and 105 deg. F.

The bottom of the pool is tiled with off-white non-slip tiles, and the sides with white glazed tiles. The surrounding floor is covered with buff non-slip tiles, with a black non-slip tiled margin to the pool. Water enters the pool 9 in. below water level in two corners (one service duct shown in sketch) and leaves from the bottom in the other two corners. Scum channels are provided at water level, and there is a drain for emptying.

Under-water lighting is provided by three lighting fittings designed to take 250-watt lamps. These are situated in one longitudinal wall of the pool (two shown) at low level. As the fittings are completely embedded in the wall, they are provided with mechanical ventilation which operates when the lights are switched on.

Two under-water douches are provided, connected by rubber hoses to a point at the side of the pool (the "exposed" side—shown in sketch). Each douche is supplied with water at the rate of five gallons per minute at 120 deg. F. and a pressure at the nozzles of 13 lb. per square inch.

The temperature of the water in the pool is maintained by circulating through a steam/water calorifier at a rate of 40 gallons per minute, equivalent to a complete circulation every 1¼ hours. The calorifier has a thermal capacity of 400,000 British Thermal Units per hour and is supplied with steam from the general heating system reduced from 50 to 15 lb. per square inch. The water can be heated from cold in approximately four hours, and constant temperature is maintained by means of a thermostat on the calorifier. Cold water from the mains, for make up to compensate for temperature rise when both douches are used for long periods, is injected into the circulation after leaving the pool. A controlled by-pass is fitted to the steam supply to the calorifier to ensure that after the initial warming up there can be no excessive rise in temperature. A large-size dial thermometer gives constant indication of the temperature of the water leaving the pool.

Water for the douches is extracted from the pool water before the pool calorifier, and is pumped by the douche pump through the douche calorifier, which has a thermal capacity of 70,000 B.T.U. per hour. A large dial thermometer indicates the douche water temperature.

Galvanised water-tight lighting fittings and switches are installed throughout. A shower bath is provided for normal ablution purposes.

MAINTENANCE OF HOUSING ESTATES

The Importance of Design and Construction

THE view that design and construction were major factors of importance in the maintenance of housing estates and that greater consideration should be given by housing committees, their technical officials and the Ministry of Health to the fact that initial cost was not the only cost, was expressed by DR. RONALD BRADBURY, Ph.D., F.R.I.B.A., A.M.T.P.I., City Architect and Director of Housing, Liverpool, when he addressed the eighteenth annual conference of the Institute of Housing at Blackpool on October 20. Dr. Bradbury said:—

Whether the duties be entrusted to a single department of the authority, or whether they are split between two or more, the job which any municipal housing organisation sets out to do is threefold in character. The task is "to create, to allocate and to maintain" municipal housing accommodation. Nowadays, such is the shortage of suitable houses throughout the country that there is a tendency to concentrate effort almost entirely on the first two aspects of the problem, to the exclusion of any interest or enthusiasm for "maintenance." If, however, we are to pay more than lip service to "planning" in its broadest aspects, we cannot completely ignore the "maintenance" side of the housing problem. Planning means to think ahead—to decide now, in light of present conditions, what is best for the future—and we shall be failing in our task if we leave our successors to face up to inordinately heavy maintenance costs when the houses and estates which we are designing and building now, grow old. We must be especially on our guard at this particular time because of the great emphasis which is being placed upon the necessity of reducing the initial cost of houses. We do not need to be reminded that it is easy to be "penny wise and pound foolish" when selecting a domestic article which we require. The first cost is not always the only criterion on which we should base our selection. The lasting qualities of the article must also be taken into account, and this principle applies equally to houses as to other domestic needs. We must ensure, therefore, that we build wisely and well, and that our buildings will continue to have a useful life throughout the whole of the 60-year period during which they are financed. It would not serve any useful purpose to raise, at this juncture, the question of whether or not it is wise to finance housing on such a long-term basis. In a paper like this, existing facts must be accepted and the position faced realistically. Wishful thinking about shorter loan periods or more temporary types of houses, which can be scrapped as soon as they are outmoded, must be excluded from our consideration of the problem.

It is essential, at this stage, to define more closely what is meant by the rather loose term "maintenance." At the outset it should be realised that my remarks are concerned only with maintenance so far as it applies to permanent houses built by local authorities under the Housing Acts. Moreover, it is also confined entirely to the amount of money expended by way of labour and materials to ensure the continuance of an agreed standard of habitability. It does not include any question of additions or improvements to the original design or any of the aspects normally included in the term "estate management." It is important to emphasise these points, for oftentimes charges which arise from such ancillary matters are included in the maintenance account of local authorities, thus making comparisons very difficult.

To clarify the position further, the term "maintenance," as thus defined, must also be broken down. To keep a property in good heart, it is essential not only to carry out periodic maintenance on an estate basis but also to see that the repairs required as a result of ordinary domestic wear and tear, or negligence, are properly executed. Thus the term "maintenance" covers two main subdivisions:

(a) periodic or routine estate maintenance, and

(b) day-to-day jobbing repairs,

the latter category, of course, falling, as already noted, into two further subdivisions, namely:

(i) repairs occasioned by normal wear and tear, and

(ii) repairs necessitated by carelessness or malicious damage.

The link-up between "creation" and "periodic" or routine estate maintenance is at once obvious. Certain materials specified by the architect are of such a nature as to require periodic treatment to ensure their continued efficiency during the whole life of the house. A simple example is the painting of woodwork. Unless timber which is exposed to the weather is periodically painted at more or less definitely assessable periods, it will deteriorate and decay long before 60 years have passed. This is an obvious example, but there are others less obvious which are equally important and in which the financial results of inadequate maintenance may be just as serious.

Pre- and Post-War Comparisons.

Up to 1939 nobody was really very greatly concerned about the financial side of "maintenance." Most local authorities were setting aside sums of about £5 to £5 10s. per house, and the actual cost of executing the necessary repairs and maintaining the property in good heart, in most cases, was a few shillings less per house than the amount set aside, so that the balance in the repairs fund tended to increase each year rather than to decrease. This process continued during the early years of the war, and, indeed, was accelerated simply because local authorities had so many other jobs to do, and materials and labour were so scarce that anything except the most urgent maintenance jobs was just carried over. At the end of the war, however, this policy left most local authorities with very heavy arrears of maintenance, and when they came to tackle them they found that the cost of doing the work had risen enormously since pre-war days, and, moreover, it has continued to rise since. For example, wage rates in Liverpool have increased for craftsmen to date approximately 66⅔ per cent. over the pre-war level (from 1s. 10d. per hour to 2s. 11½d. per hour), but, in addition to direct wage increases, operatives now receive a number of benefits which they did not enjoy prior to the war, which must also be added when considering labour costs. These "disguised increases" include such items as increased employer's contributions to National Insurance and other increased insurances, sick benefit and increased holidays with pay. Moreover, it is unfortunate that the average rate of output obtained from the labour force is still, for many and varied reasons, less than it was pre-war. It is not appropriate in this paper to go more closely into the reasons for this drop in output, but nevertheless it does make its effect felt in the increased labour cost of maintenance repairs. It is difficult, therefore, to assess exactly what the average increase in labour costs is now as compared with pre-war. Some authorities place it as high as 165 to 170 per cent. on 1939 figures, and while this may perhaps be somewhat on the high side, it is quite clear that labour costs have, in fact, more than doubled.

Make-up of Maintenance Costs.

Maintenance costs are made up of labour and material costs. Materials, like labour costs, have also risen enormously, as can be seen from the examples given below, which cover selected bulk building materials:—

	1938/39	1948/49
Paint, per gal. ...	19s. 0d.	42s. 0d.
Timber softwood, per std.	£18	£60
Common bricks, per 1,000	50s. 6d.	150s. 0d.

In common with the three items referred to above, there have also been increases in the establishment and supervisory charges, due to similar wage increases enjoyed by the supervisory personnel controlling maintenance work. When all these increases are added together, local authorities have found, to their dismay, that it is costing two to three times more to get the same amount of work done than it would have cost in 1939.

Local authorities have, of course, had no option but to get on with the arrears of maintenance as rapidly as conditions would permit. Any other policy would have been "bad housekeeping," as the effects of lack of maintenance during the war years were beginning to show on all housing estates, and the fabric and fitments of the houses required attention without further delay. It has been necessary, therefore, to embark, during the last few years, on very widespread programmes just at the time when costs were at the peak. The result of all this is that the balance in the repairs fund, built up in pre-war years, has now been used up and many local authorities have already been faced with an increased rate of contribution per house to the maintenance account, which has had to be met by an increase in rents. A few lucky authorities still have something in the maintenance "kitty," but these will have to follow suit and make the necessary financial adjustments in the very near future.

For the sake of example, the following figures for Liverpool may be of interest. In the year 1938/39, the actual cost of maintenance per house amounted to £5 4s. 9d., and as the contribution from rents to the repairs account was £5 10s. per dwelling, the credit in the maintenance account for that year was thus increased by 5s. 3d. per dwelling. As the city had, at that date, just under 39,000 houses, everybody was satisfied. The position now, however, is very different. The actual cost of maintenance of permanent houses for the year 1948/49 amounted to £10 5s. per dwelling as against a contribution to the repairs fund of £8 15s. per dwelling—a deficit on the year of £1 10s. per dwelling, and the estate has now risen to 44,728 permanent houses. So far as the year 1948/49 is concerned, therefore, the already

dwindling reserve in the repairs account has been eaten into to the extent of £67,092. The reserve in the maintenance account at March 31, 1949, was £179,000 as compared with £409,000 in 1938/39. In this connection it should be noted that, in order to offset to some extent the estimated increase of expenditure over revenue for the year, it was decided to increase rents by amounts varying from 1s. 6d. per week in the case of houses, to 9d. for city-type flats.

One factor in the increased expenditure on maintenance since the end of the war has been the rise in the labour force to cope with the maintenance arrears. For example, in Liverpool, whereas in 1939 the average number of maintenance employees was 729, it is now 1,163 and did, in fact, reach the total of 1,892 in September, 1948.

Housing Output.

Another factor which must be borne in mind when considering the present maintenance position with that of pre-war is that of housing output. Prior to the war most local authorities were producing houses in much greater numbers than at present. It is obvious that a new house requires very little maintenance in the early part of its life, and it follows, therefore, from this that the more new houses built each year, and for which a contribution is paid into the repairs account, the more solvent that account will be. Ten years have passed since 1939, and all pre-war houses are ten years older. Many of those built immediately after the last war have now reached a stage at which they require a very considerable amount of maintenance, and yet maintenance costs are at "the highest ever" level, and the contributions from new houses are at a much lower level. During the war years the annual production rate was negligible, and only now is it beginning to build up to sizable proportions from the initial trickle at the end of hostilities, so that the balance of the maintenance account has been very adversely affected from this aspect also.

An analysis of the main items of cost during the last maintenance year may be of interest in connection with the subject of this paper, for such an analysis clearly shows that certain elements of design and construction do have serious repercussions upon the maintenance account in subsequent years. For example, the reconditioning and renewal of fences, gates and paths accounted for £1 9s. 8d. per dwelling during 1948/49, or 14.46 per cent. of the total maintenance costs. Experience shows that wooden fences and gates, even if adequately maintained, are unlikely to last as long as the houses which they serve, and must be renewed perhaps twice in the lifetime of the houses. Similarly concrete-flagged or brick paths can be expensive items to recondition and entail considerable outlay to keep in good repair after only normal wear and tear. Water-pipes and fittings cost 17s. 4d. per dwelling, or 8.45 per cent. to maintain, despite the mild winter. Many of the cold- and hot-water systems of the older houses now require considerable attention. Joinery repairs cost 16s. 7d., or 8.08 per cent. In addition to repairs needed to make good the ravages of time in the early houses, the effect of the almost complete cessation of maintenance work during the war years is now being felt in this item. When external paint-work is being undertaken on schemes which have not been painted since before the war, considerable repairs are needed to doors, windows, eaves, etc., before painting can be commenced. This is another added burden resulting from the war emergency. Last year the external paint-work to the Liverpool schemes cost £2 4s. 6d. on average per dwelling, or 21.69 per cent. of the total maintenance cost. Whilst it is anticipated that once the war-time arrears in painting have been made good, the sum to be expended annually on external painting will be reduced, it will always constitute a fairly heavy maintenance item owing to the amount of woodwork used in the construction of the buildings.

Annual Cost of Redecoration.

Prior to the war it was the practice in Liverpool to redecorate the interiors of municipal houses on a seven-years' cycle, so that the whole of the interior of each house was redecorated during that period, although individual rooms might be done in different years. In view of the reduction in the balance of the maintenance account, internal painting and decorating was reduced to a minimum during 1948/49. Nevertheless the cost of this service during the year was 16s. 10d. per dwelling, or 8.2 per cent. It has recently been decided by the Housing Committee, albeit with great reluctance, to discontinue internal redecoration altogether, although it has been agreed that the maintenance department should assist tenants with plant and labour to do awkward parts of houses such as staircase walls, with the tenant's own materials. No interference is to be made, however, in the arrangements whereby individual houses are redecorated where public health and hygiene is concerned.

Naturally, certain of the factors involved in the construction of a house are determined by the physical conditions of the site as well as by the basic design and size of the building. So far as these are concerned, only a very small element of choice is left to the architect. The construction and type of foundations to be adopted more or less fix themselves, as do the thicknesses of both the internal and external walls and the main structural parts of the floor and the roof, since in every case structural stability is the sole criterion. There is, therefore, less scope for dealing with the maintenance aspects than in the case of other elements of the design. In this connection, however, passing mention may be made of the "bye-law" aspect of the problem. In most cases local bye-laws were fixed more than 50 years ago, and often take no cognisance of new materials and improved structural techniques, and, indeed, even the model bye-laws might, in certain cases, be pruned down without any appreciable loss of structural efficiency. A consideration of this aspect is not, however, germane to this paper, but it is an avenue which might be profitably explored with a view to reducing building costs.

Once, however, the main structural pattern of the superstructure has been decided, the question of maintenance assumes some importance in respect of the ancillary design decisions which then have to be made. For example, the choice of walling material may have a very important effect upon subsequent maintenance costs. There are a number of materials, often of a very attractive and decorative character, about whose weathering properties over a long period very little is known. On the other hand there are tried and true traditional materials, the costs of maintaining which over a period of 60 years are well known. Certain natural stones and clay-bricks, for example, require little or no maintenance for at least 60 to 100 years. This statement, however, must not be taken to mean that other materials for external walling must be ruled out. Our large estates would be very dull, indeed, if rough-cast and brickwork, colour-washed or artificial stone and other attractive alternatives, were to be ruled out entirely. The use of these, however, must be carefully debated and allowance must be made for their upkeep and periodic maintenance when working on the 60-year basis. There has been, perhaps, a tendency—now somewhat on the wane—for architects to accept at their face value the "sales statements" of many of the manufacturers sponsoring new materials. Already, even in the post-war period, certain local authorities have had "their fingers burnt" as a result of over-enthusiasm for the novel. There must be progress, but, in building, it must be sure progress if financial difficulties in the future are not to be the result. Experience during recent years has shown that it is not always possible under laboratory conditions to parallel exactly natural conditions over a very long period of time. Nature can produce sets of circumstances which it is almost beyond the wit of man to produce in a laboratory. Who of us can forget the abnormal weather of a few winters ago which produced condensation problems of an unbelievable character, and from which houses built in certain new techniques of construction emerged with much less kudos than those built by traditional methods?

Selection of External Walling.

In considering the selection of external walling materials the architect must ask himself not only whether the technique is structurally sound and what will be its initial cost, but also:—

(*a*) what will its resistance be to weather over a long period?

(*b*) what will its maintenance costs be as compared with a normal tried and true traditional material?

(*c*) how will it stand up to normal, and even abnormal, handling? For nobody can control or foresee the kind of accident likely to happen (although the effect of flying brickbats or the carelessly-used ladder can be assessed).

Whilst dealing with the question of the exterior of the building, we should remember the doors and windows. The technique of designing wooden windows and doors is well understood, and their maintenance costs over long periods can be fairly readily assessed. Only now are we learning, however, how necessary it is to see that metal doors and windows constructed of ferrous metals are properly protected against the effects of weather. In certain estates not much more than 20 years old, the problem of metal-window corrosion is already arising, and it is clear that ordinary paint-work provides an inadequate protection to steel windows and doors. It is clearly evident that money spent on ensuring that steel building elements exposed to the weather should be galvanised, or otherwise treated against corrosion, is a prudent precaution, and that the extra expenditure involved will, over a long period, actually mean a saving of money. Similarly, the use of non-ferrous metals, such as aluminium, might be encouraged.

It is, of course, impossible in a paper of this kind to run through the whole range of alternative methods and materials which may be used in the construction of houses, and my remarks upon the subject must, therefore, be somewhat disconnected and certainly inadequate. Much of what I have already said, however, applies to roofing materials, and great care should be exercised in specifying those to be used,

particularly in certain districts where adjacent industries are producing fumes likely to have deleterious effects upon certain types of material. I have known cases where whole roofs have had to be re-covered after a lapse of only 15 or 20 years as a result of air-borne acid action upon the original material specified. Of course, it is easy to be wise after the event, but prudence is a sound virtue when compiling a specification.

The architect to-day is positively embarrassed by the range of new finishes for walls, floors and ceilings which are brought to his attention, particularly now that there is sufficient paper available for their manufacturers to produce highly-coloured sales-brochures (highly-coloured both literally and metaphorically) and of an almost pre-war opulence. Many of the finishes constitute indeed great technical advances and fulfil long-felt wants, and are only put on the market after exhaustive tests. Others, however, are still in the experimental stage, and a large "X" must be placed against their unknown resistance to wear and tear. What then is the architect to do? Is he to turn down all of these new materials, or is he to specify them, leaving time to tell its story? Surely there is a middle road, but one which calls for an enlightened attitude by the Housing Committee which he serves. Namely, the "limited experiment" — not specifying for a whole scheme, but merely using the new items for a single house, or even a single room, so that experience can be gained of their behaviour under practical conditions, leaving over to the next stage 100 per cent. specification procedure. Some means for publicising the reports of such tests would, moreover, be of great assistance to other technical officials. Indeed, at the moment there is a good deal of unofficial checking-up on new materials which is carried on between local authorities, but it is scarcely sufficient, and a great consumer of time. When considering some new finishes, what most of us want to know is the answers to several simple questions, such as:

(a) Has it been used for the purpose for which I want to use it?

(b) If so, how long has it been so used, and under what conditions?

(c) How is it standing up, and what have been the maintenance costs on it?

Only when we have these data can we decide whether or not to specify it in our own building schemes.

Assessment of Maintenance Costs.

There must be a mass of evidence available — the files of local authorities which, if properly classified and collated, would give data by means of which the maintenance costs of various materials and finishes over a long period could be accurately assessed. Here is a subject for active research, the results of which would be of great value to all those who are interested in both the financial and design aspects of housing. Some of the conclusions reached as a result of such research might indeed be surprising and might lead to radical changes in the technique of local authority housing. This line of inquiry is, therefore, recommended to the appropriate research authorities.

Great emphasis is placed by most housing authorities upon the need for maintaining the present "space standards" in municipal housing, and a veritable storm of debate is raised by the issue of whether 7 ft. 6 in. would provide adequate headroom. Very little interest is displayed by comparison, however, in structural standards. Yet here, size is not the sole criterion by which a house should be judged. A smaller house more substantially built may be better than a bigger house in which the materials used have been skimped or the specification has been cut to the bone. It may provide not only a better home but also one which can be more economically maintained. If the dollar crisis leads to a cut in the housing programme, housing authorities would be well advised to take this factor into consideration when deciding their policy.

My paper is to be taken as a plea, and, I hope, a timely one, for greater consideration to be given by housing committees, their technical officials and the Ministry, to the fact that initial cost is not the only cost; that "ersatz" materials may be financial fifth columnists; and that good design does not consist solely of appearance, but demands that the houses built shall require minimum maintenance during their useful life. Our national economic position demands that the houses we are building to-day shall be assets for the future and not liabilities.

The Councillor's Approach to Housing

A PLEA for consideration of old people and single people in housing planning was made by COUNCILLOR MRS. M. A. CRESWICK ATKINSON, health adviser to the W.V.S. and former chairman of Stoke Newington Housing Committee, who also spoke at the conference.

Mrs. Atkinson, whose subject was "The Councillor's Approach to Housing," said that those responsible for housing should keep in mind the needs of married couples without children, either by planning a certain number of suitable housing units or by converting property unsuitable for use by families with children.

The aged, too, were part of the community, and it should be possible to provide a certain number of one-bedroom flats or bed-sitting-room flats, or somewhat similar cottages, on every estate.

"For cases where old people do really need a little attention special groups of dwellings where a warden is available can be included in estate planning," Mrs. Atkinson added.

"Single men and women come off by far the worse in the allocation of what housing accommodation is available, and this category is just as much entitled to get the benefit of government housing grants to local authorities as anyone else.

"But the answer here is not far to seek now that hostels can be provided. In this way planning can cover the needs of these folk without the worst headaches which accompany planning for other categories."

The speaker added that, with good and inspired planning, it should be possible for each reasonably large group of dwellings to form a neighbourhood unit, with cottages, houses, maisonettes, flats of all sizes, including one-bedroom flatlets for single people in a hostel, and a similar type of provision for aged people needing some attention.

Books Received.

MANUAL OF BUILDING SCIENCE. By John F. Douglas and Lintott Kent. (London: Sir Isaac Pitman and Sons, Ltd.) Price 18s.

NATIONAL INSURANCE. By Douglas Potter and D. H. Stansfeld. (London: Butterworth and Co. (Publishers), Ltd.) Price 31s. post free.

TELEVISION AERIAL PROBLEMS

Guidance for Local Authorities

IT is estimated that over six million people or two million houses come within the official 50-mile range of the B.B.C.'s new television transmitter at Sutton Coldfield, although, in view of the power of the transmitter, the television industry expects the actual range to be greater.

Next year work will have begun on the Yorkshire station and possibly also on the stations in Scotland and South-West England, so that in the next few years probably 80 per cent. of Great Britain will be covered by television.

The Radio Industry Council, representing all branches of the radio manufacturing industry, has issued the following points for the information of local authorities.

(a) It is popular fallacy that "H"-type aerials are the only type suitable for television. The design of television aerials is, however, important, and the quality of reception largely depends on their shape, size, height and general siting.

The nature of the country between the transmitter and the receiver has a considerable effect upon reception; high buildings close to the receiver may obstruct or reflect signals; and there is also the question of interference from electrical apparatus of various kinds, including car ignition.

(b) In areas of high field strength—normally up to 20 miles from transmitter—an aerial in a loft is almost as efficient as one erected outside the building. Several types are specifically designed for installation in a loft space and can be erected high up under the ridge well away from plumbing or conduits.

(c) In an area eight to ten miles from the transmitter satisfactory reception can normally be received using an aerial erected inside the same room as the receiver, although a certain amount of "fading" may be experienced by people moving about the room during reception.

(d) At rather longer ranges a single-pole type aerial erected outside will be ample; but on getting to distances of 20 miles and more from the transmitter the "H" or other type of directional aerial may be found necessary. In the open, the use of a reflector—that is, the second rod of the "H"—nearly doubles the original input to the receiver and, in addition, minimises electrical interference from the direction opposite to the transmitter.

(e) Aerials can be screwed or bolted to the structure itself; this will only cause damage if the structure is faulty. Wall or chimney brackets can be an integral part of the aerial system or they can support a mast to which the aerial is fitted.

(f) Where the structure is not very strong the suggested method is as used by the Post Office for fixing overhead telephone lines. The aerial is lashed to the chimney by steel wire cable, the chimney being protected at the corners by metal angle plates.

(g) No general rule can be laid down for aerials on temporary prefabricated houses as each type requires special consideration. There is no insurmountable difficulty, however.

(h) For large buildings or blocks of flats, an aerial and an amplifier will provide up to 100 receivers with highly satisfactory reception. Such an installation can also serve a row of terraced houses, the cost being spread among tenants.

A NEW ALUMINIUM ALLOY ROOF AT WARRINGTON

A LARGE old-fashioned factory roof at Warrington, 280 ft. long by 40 ft. span, with a height from floor to eaves of 35 ft. had become outworn, and its condition called for something more than mere re-covering.

It was decided that a covering of BA "Rigidal" corrugated aluminium sheeting, lined to prevent heat loss and condensation, should take the place of the old roof covering of felt on board and that the opportunity be taken to replace the old patent glazing with a newly-patented sheet light, also built in aluminium alloy, to provide dispersed lighting over the full length and width of the building.

In view of the height of the roof above ground floor, and partly because it was necessary to carry the reconstruction through with as little as possible interference to the factory's normal production routine, it was planned to incorporate aluminium alloy trusses and aluminium alloy purlins intermediate between existing trusses, which were spaced at 20-ft. centres. The original trusses were, therefore, thoroughly cleaned down, repainted with aluminium paint to match the aluminium alloy trusses and retained, but the old timber purlins, roof boarding and felt were stripped out and scrapped.

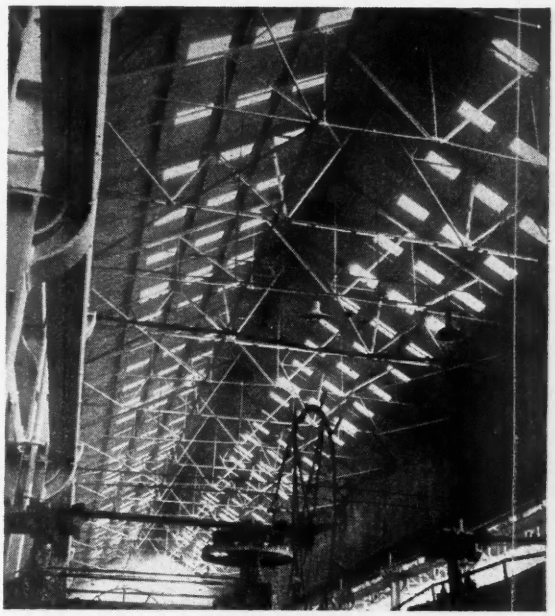
It was necessary to incorporate the existing steel supporting structure and it was essential, of course, for the new roof framing to be set out to match the existing roof outline. Provision had to be made for some variation in the centre of the existing eaves beams and a further complication arose through old trusses being out of parallel.

Special care had to be taken over the design of the bracing to ensure that both the new and the retained structural components would function as one integrated whole. As was to be expected, the new covering of corrugated aluminium alloy sheets, connected to the structure only by hook bolts, had not so much rigidity as the thick boarding on heavy timber purlins in the old roof.

The original roof covering had acted as a complete bracing in itself, but in the new roof independent bracing was provided in compensation.

Fourteen new aluminium alloy trusses each weighing approximately 186 lb. were erected in all and the weight of each 10-ft. bay of aluminium alloy purlins was kept to 140 lb. It might also be mentioned here that aluminium hook bolts and nuts were used throughout in fixing the new sheeting and lining.

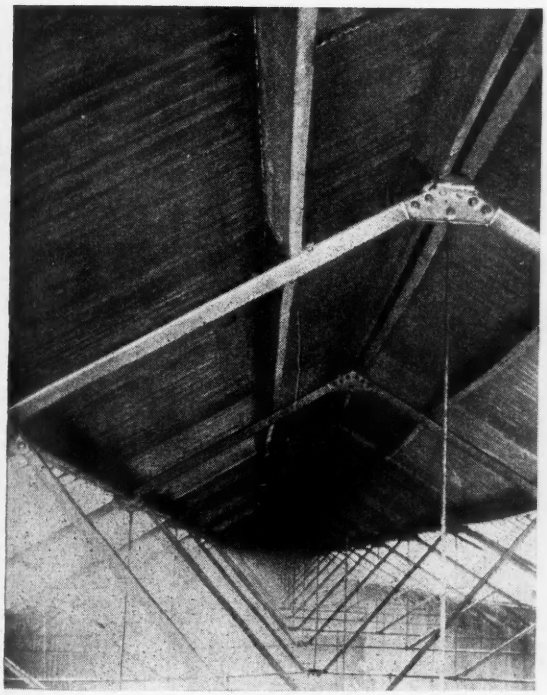
The actual erection work on the new roof was carefully planned to avoid halting the normal factory production proceeding on the floor below. Dismantling of the old roof was therefore carried out in sections. As each section was cleared, replacement with trusses, purlins, roof lining material, corrugated sheeting and new rooflights was immediately undertaken and completed before beginning dismantling on the next section.



Interior view of factory after reconstruction of roof.

A temporary decking was suspended at the tie level of the existing steel trusses at 20-ft. centres, taking in a 40-ft. length of roof at each time, and this was used as a platform on which the dismantling and erection work could be carried out.

The existing 36 in. diameter Robertson ventilators, which were in good condition, were incorporated into the reconstructed roof. Each was raised, moved to one side as the work



Interior view showing condition of old roof. Glazing bars were decayed beyond repair.

Re-sheeting the roof. Note simple design of the standard size sheet rooflight.

advanced and then taken back and anchored into position as soon as sheeting and lining operations were completed on its site. The opportunity was also taken to install two additional mechanical extractors.

Aluminium alloy was used for all new ridging and gable trims, as well as for all supporting tees for the insulating boarding.

All the dismantling and reconstruction operations were executed wholly from outside, a procedure which would have been almost impossible other than by using light alloy material.

The main contractors were Messrs. Structural and Mechanical Development Engineers, Ltd., of Slough. Erection and site works were carried out by Wembley Contractors, Ltd., and Blackburn and General Aircraft, Ltd., were responsible for the rooflights.

BUILDING CONSTRUCTION IN THE U.S.S.R.

Professor Bernal Talks on His Recent Visit to the Union

THE interest taken by the rising generation of British architects and other building technicians in work now being done in Russia was demonstrated on October 19, when 200 or more of them assembled at the Architectural Association to hear Professor Bernal tell what he had seen in a recent visit to that country.

MR. ARTHUR LING, in introducing the lecturer, said that Professor Bernal was not an architect: his studies had been in the field of building technique. He was professor of physics at Birkbeck College and had made a previous visit to the Soviet Union in the thirties in addition to his recent journey there.

PROFESSOR BERNAL said that in Moscow there was a Museum of Building Technique, and another of Planning and Building. He had visited these museums, seen a very large number of buildings, been on one actual site when the building was in course of erection and had two meetings, each lasting four or five hours, with the leading architects of the Soviet Union. Visitors to Russia nowadays noticed first the amount of building going on. Everywhere there were cranes, scaffolding and the whole apparatus and activity of building. Coming into Moscow by air he had looked out for the landmarks of his previous visit but had found almost everything quite different. To get some idea of that city to-day one had to imagine such operations as the cutting of Kingsway repeated two or three hundred times. Enormously wide streets were aligned with buildings, each with its individuality, but with harmony among them all.

Throughout the Soviet Union the process of building was in a state of rapid change. The process of improving methods was following certain very definite general lines aiming at producing the maximum amount of useful floor space by the minimum of effort and in the minimum of time. A good deal of what he had seen going on was, in principle, obsolete; present methods would be improved in wo or three years' time, but meanwhile they were being continued. He had thought that when visiting the Soviet Union he might have been able to give people there some useful information on building science and technical development, but he had found that there was very little he could do in that respect.

Changing Techniques.

The Museum of Building Construction was continually turning over techniques: it contained only the latest things. It was divided into three sections. The first dealt with building materials; the second with construction of the heavier kind—factories, schools, etc.—and the third was devoted to housing. The museum was a workers' museum: new teams of workers and their leaders were taken round and shown all that was going on in different parts of the Soviet Union. Mechanisation was the key word for building technique in Russia. The industry had a steady flow of labour and materials and an absolutely uniform rhythm. With temperatures sometimes as much as 40 or 50 degrees below zero, work went on as in summer. This achievement had been realised by a complete overhaul of all the mechanics of building.

There had been a joint effort by four groups of workers, i.e., architects, engineers, physical scientists and the workers on the job. Many of the most important improvements had been suggested by men on the job. Apart from the erection of factories, general domestic building, including houses, shops, schools, public offices and so forth, fell into four major categories. The first of these was that of large buildings with steel frames. The second group consisted of large urban buildings, at present erected with load-bearing brick walls, but soon to become steel frame buildings. These buildings aligned the main streets of large towns and varied from five to ten storeys. The third and largest category was that of new housing schemes. It consisted of neighbourhood units in blocks of apartments two or three storeys high and containing from ten to 30 apartments per block. Finally, there was small town and rural housing. In this category the houses were isolated or built three or four in a group. Different methods of construction were employed in the different categories.

Use of Prefabrication.

In building with load-bearing walls the principle was to build with the minimum of actual physical work. No human being was required to move any great distance horizontally, and even less vertically. Cranes and other machinery moved bricks, mortar and other materials to the workers, who merely put the materials into the right places. The target aimed at was to lay five thousand bricks per man per day: the actual level that he had seen attained on a particular job was sixteen hundred bricks per man per day. The workers worked in teams. About fifty per cent. of the people employed in building were women.

The speaker illustrated his remarks with slides, and among other points mentioned in connection with these was the fact that floors and nearly everything else were prefabricated. Windows were taken to buildings already glazed. All dimensions were standardised, the main dimensions being 2.9 metres and 3.9 metres. The general principle was to have a high degree of mechanisation, put a lot of people on the job and get through quickly. Most of the building materials for Moscow were being produced in about eight factories, each factory producing a different material. The standard area for a flat was only from 600 to 700 square feet, but this did not include space occupied by stairs, corridors, etc., or even that of kitchen and bathroom. The two latter were built back to back as one unit to save plumbing, and in blocks these units were placed one over another. Most heating in towns was now district heating from power stations. Country heating was largely by stoves. Moscow had been turned from a city burning oil and wood into one burning gas. Gas was used for cooking.

There were also skyscrapers in process of being built: that at Moscow University would have thirty-two storeys, and the central tower was surrounded and buttressed by other buildings at a lower height. The plan was spidery because of the insistence on daylight. The foundation was very poor and the whole mass of building had been floated on what should be described as a concrete boat rather than as a concrete raft.

Planning in Moscow.

Referring to planning, Professor Bernal said the present plan of Moscow had been laid down by the old town. It consisted of concentric boulevards with radial streets. The main idea now was to leave the Kremlin surrounded by gardens. When a new street was cut through the town very bad buildings were pulled down. Outside the city was a belt of parks and outside that neighbourhood units. Factories were concentrated in three or four places: some years ago all factories were removed from the central area. The general plan was to develop the outer areas and main street areas first. Only buildings of beauty or historic interest were preserved, but the spaces between main streets were left largely untouched for the present. Nevertheless, the worst districts in Moscow had been cleared away. At present wooden shacks and similar dwellings remained because their occupants could not be removed until alternative accommodation was provided.

New towns were planned in relation to the number of workers to be employed in them, and according to the development of a five-year plan, the architect had to provide houses, shops, schools, etc., as the various stages of the main factory were built up. Planning was essentially the delegation of work to architectural groups which had to plan and carry on the plan for twenty-five or thirty years. Building, as far as the Soviet Union was concerned, was primarily the architect's job. The Soviet Union was a whole set of countries, where one region differed from another; Leningrad, for example, was quite different from Moscow. Russian architects had broken away from the functionalist period and had gone over to a style which they considered contained all the useful functional elements without the austerity of its external appearance. They were assisted by an excellent technical Press.

After his talk Professor Bernal answered a number of questions. Among points brought out in the answers was that most Russian brickwork was laid without any attempt to get an even surface. It was intended to be covered with stucco, so the rougher the surface the better. Stucco, however, was now being abandoned because of maintenance costs; it did not last through more than four or five winters. On some buildings he had seen facing bricks being used, and he would not say that it was worse than he had seen in this country. It was carried out at high speed, the bricks being pointed by a special pointing iron that travelled along the whole face. All kinds of ingenious tools were in use, the speaker stated. Russian building was generally

rougher and heavier than British, but the Russians were careful. As he had said, windows were put in glazed, but he had had not seen a broken pane.

So far as he knew, Professor Bernal said, all building operatives worked an eight-hour day and little overtime was put in. The building trade unions included one for architects, and the architect was in direct contact with all the other people engaged in building. The operative was encouraged to develop new methods and set up faster production. This encouragement was made through propaganda, books, honorific incentives such as medals and prizes, and the payment of bonuses. The Russian plan was not rigid; improvements could, if necessary, be introduced in the middle of the work. The rising generation of architects was, to some extent, drawn from the working class.

There was a very large number of scientific research workers in the Soviet building industry. A great deal of research had been put into Soviet heating appliances and into building technique and materials. Great use was made of stone, not only hard stone like granite, but softer stone as well. Most of the materials used were of local origin and the building style had to be subservient to the local material. Timber was not universal. It was used very largely only in the forest region and in areas accessible by river. In the south brick and adobe were used for small buildings. The Moscow museum contained every new material that the professor had seen in other countries. A material was not used unless there was sufficient supply to allow for its use on a large scale, and the large-scale use of new materials would, he considered, be practised in Russia much sooner than in this country.

LOCAL AUTHORITIES' LAUNDRIES

Legislation to be Introduced

At its meeting on October 25 the London County Council was asked by the General Purposes Committee to promote in the session of Parliament of 1949-50 legislation to empower the metropolitan borough councils to provide municipal laundry services.

The Committee reported that the metropolitan borough councils and the Common Council of the City of London and local authorities outside London already had powers to provide public washhouses to which persons could resort for the purpose of doing their own laundry. So far as the metropolitan borough councils were concerned, these powers were contained in Part VII of the Public Health (London) Act, 1936. They did not, however, authorise the borough councils to carry on the business of a launderer.

Under the Housing Act, 1949, housing authorities could provide, in connection with the provision by them for any persons of housing accommodation, such facilities for doing laundry and such laundry services as accorded with the needs of those persons and make reasonable charges therefor. As the Act dealt with housing, any powers conferred thereby must be related to housing powers, and could not extend the general powers of local authorities with respect to the provision of laundry facilities.

The Committee was advised that the Council could promote the necessary legislation, subject to compliance with the procedure specified in Section 151 of the London Government Act, 1939.

VALUATION AND RATING PROCEDURE IN THE FUTURE—2

By NORMAN P. GREIG, B.A., Barrister-at-Law, F.I.Arb., F.R.San.I., etc.

Settling the Valuation List.

It is the duty of the Valuation Officer at or about, and in no case later than the end of December preceding the date on which a new valuation list is to come into force (see Article 1), to settle it, sign it, and send it to the rating authority. He must also notify the clerk of the local Valuation Panel (to be explained later) of the settling and signing, and of the date of settling, etc. Before doing this, he must make such alterations as are necessary to give effect to the decisions given on appeal, and where a notice of appeal has been withdrawn by agreement between the Valuation Officer, the appellant and any other person entitled to be heard on the appeal, alterations necessary to the carrying out of such agreement. But he need not wait for the hearing of all appeals before signing the list, as special provisions are included in the Act (Section 38 (5)) in regard to this matter.

The Valuation Officer, before settling the list, must cause to be ascertained and placed in it particulars regarding total values, both of the whole rating area and in respect of any parish or other area liable to be charged separately under any precept, or which are to bear any special expenses. It therefore follows that the signed and settled list should correspond with the revised draft list.

The list, when sent to the rating authority, will be (subject to any alterations allowed by Part III) the valuation list for the particular rating area, but any failure on the Valuation Officer's part to complete any proceedings in regard to the preparation, revision, settling and signing within the required time, or even an omission required by law, is not to render a list invalid.

The Rating Authority's Duty.

The valuation list is to be deposited at the office of the authority, who must give effect to any directions given to it by the Valuation Officer, and which are authorised by the Act, requiring alterations to be made in the valuation list.

Alteration of Current Valuation Lists—"Proposals."

Persons aggrieved (a) by the inclusion in the list of any hereditament, or (b) of any value given to an hereditament or any statement made or omitted, or (c) where a building or a portion of it which is occupied in parts, by its valuation in the list as a single hereditament, can make "proposals" at any time for the alteration of a list in regard to the above matters: the Valuation Officer, however, can make "proposals" for *any* alteration to a list.

Proceedings Following Proposals.

Those made other than by the Valuation Officer must be in writing, be served on the Valuation Officer, specify the grounds for the proposed alteration and comply with Regulations to be made by the Minister as to their form and other matters.

Within seven days from the date of the "proposal" made by or served on him, the Officer must send a copy to (a) the occupier of the hereditament concerned and (b) the rating authority for the area; but a copy of the proposal need not be sent to the occupier where the proposal is made other than by the Officer and the proposed alteration is only a reduction in the value of the hereditament. Further procedure under Section 41, briefly, is as follows:—

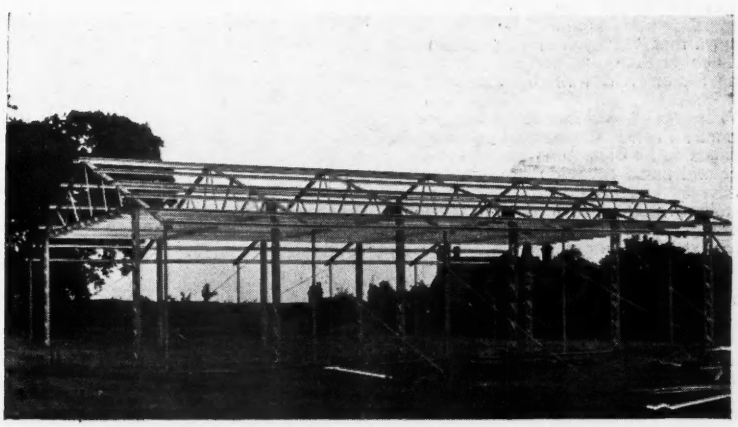
(1) An owner or occupier of the whole or part, or the rating authority, can serve notices of objection on the Valuation Officer, who, within seven days, must send a copy to the person who made the proposal.

(2) If the proposal is made by someone other than the Valuation Officer, the latter can, within 21 days from the date of proposal, serve notice of objection on the maker of the proposal.

(3) When the times mentioned above for a notice of objection have expired and no notice has been served or has been unconditionally withdrawn, the Valuation Officer must cause the list to be altered to conform with the proposal.

(4) If notice of objection has been made and is not withdrawn, then

(a) the person making the proposal can



BUILDING IN ALUMINIUM ALLOY. The uses of aluminium in constructional and other work were recently demonstrated in a display by the Staffordshire Steel Construction Company, Ltd., Birmingham. The illustration is of the framework, in aluminium alloy, of a building designed primarily to accommodate two European families in the Middle East. It can be extended and adapted for a number of private and commercial uses.

appeal against the objection to the local Valuation Courts, and,

(b) no alteration must be made on the list because of the proposal without notice of appeal and then either (i) under direction of the Court or on Arbitration under Section 50. By this Section, notwithstanding what has been explained above, persons entitled to appear and be heard before a local Valuation Court or the County Court can, by written agreement, refer the matter to arbitration, to which the Arbitration Acts, 1889-1934, are to apply. In such a case the award is to include any directions that would otherwise have been given by the local Valuation Court or the County Court; (ii) by agreement between all persons entitled to be heard on appeal.

(c) The notice of appeal must be in writing, served within 21 days from the date when a copy of the notice of objection is received by the appellant or (as the case may be) from the service on the appellant of the notice of appeal. The notice is to be served (a) on the person making the objection, and (b) on the rating authority if they did not make the objection and are not the appellant, and (c) on the Valuation Officer if he neither made the objection nor is himself the appellant.

In the next article we shall consider the effect of any alterations made in the valuation lists as the result of "proposals," and the composition and powers of local Valuation Courts and local Valuation Panels.

(To be continued)

INSULATING HOUSES

D.S.I.R. House Heating

A RECENT memorandum on house insulation, issued by the Department of Scientific and Industrial Research, states that up to 40 per cent. of the heat put into the average British house escapes through the walls, floors and roof. Improved thermal insulation can reduce this loss, and houses could be warmer or more economical in fuel than they are now. Adequate insulation adds little, if anything, to the cost of a house, provided it is considered before the house is built, and not added as an afterthought.

The heat loss through a wall, floor or roof is determined by its "U" value; the smaller the "U" value the smaller the loss of heat. Full-scale experiments in house heating by the Building Research Station, D.S.I.R., have shown that "U" values for ground floors and roofs should be between 0.15 to 0.20 and for external walls between 0.20 and 0.25.

The "U" values of solid ground floors which are used in present-day houses fall within these limits, but those for walls and roofs do not. A roof of tiles on battens with a plaster ceiling underneath allows too much heat to pass through—its "U" value is approximately 0.56, about three times too high. The "U" value can, however, be reduced to 0.20 by adding an insulation blanket such as glass silk between the ceiling joists.

In traditional construction, good thermal insulation can be obtained by building cavity walls with the outer leaf of brick and the inner leaf of a material such as foamed slag, clinker or aerated concrete. These lightweight concretes are easy to handle in block form, and provide a good base for finishing treatments.

A full-size constructional exhibit will be a feature of the D.S.I.R. stand at the Building Exhibition.

BUILDING INCENTIVES

Mr. Russon's Address to Reading Employers

A WELL attended meeting of nearly 100 members gathered, despite the rainy evening, in the George Palmer Hall, Reading, on Tuesday, October 18, to hear the first lecture of the 1949/50 series arranged by the Reading and District Association of Building Trades Employers.

Mr. F. Russon, a Past-President of the Birmingham Association of Building Trades Employers, and a member of the National Federation's Incentives Committee, opened a discussion on the subject of "Are incentives good for the Building Industry?"

MR. RUSSON was unqualified in his opinion that payments by results are in the best interests of the industry. He said that in spite of wages having increased, the price of house building, on which incentives schemes were largely used, has remained constant over the last two years, which, in his opinion, showed that the successful application of bonusing had, at least, absorbed wages increase.

Posing the question of whether there is any alternative system to incentives, the speaker said that the only alternative that he saw was unemployment. He referred to the memorandum on incentives recently issued by the National Federation, and advised all members to study it carefully.

Builders had divided into three categories on the question of incentives. First were those builders who said that incentives led to loss of craftsmanship and scamped work. The speaker said that in his experience of incentives schemes on a variety of building contracts, craftsmanship had not suffered. The second class of builders were those who were increasing the output of their operatives by scientific methods of payments-by-results, whilst in the last category were those who were not prepared to take the trouble; and among these were some who contravened working rules by paying a plus rate. It might be said that the operatives were also divided in that way.

"Nothing is achieved in this world if no risks are taken," said Mr. Russon. "Builders will know this only too well, but in any competitive business risks have to be taken, and by properly applying scientific costing and measuring systems it is a fact that the working of incentives schemes reduces the risk."

Mr. Russon then referred to the resolution passed at the conference of the Amalgamated Society of Woodworkers on October 4. He recalled that the union was to demand an increase in the basic rates of pay of 6d. an hour; that a five-day, 40-hour week at present levels of pay should be worked; and lastly, that incentives schemes should no longer continue to be allowed in the building industry. He also recalled that in London large sections of the operatives had formed an unofficial committee to demand an extra 6d. an hour on the basic rates, and that they were going to the lengths of organising mass demonstrations in Trafalgar-square in support of this. On the other hand, continued the speaker, Sir Stafford Cripps had made the Government's intentions clear. He had said in recent speeches that the only increases in the pay packet that could be tolerated, in the present situation, were increases by way of piece-rates or payment-by results systems.

The building trades employer, said Mr. Russon, had a duty to the nation, not only to prevent prices rising further, but also to reduce costs as soon as possible. This reduction of costs was vitally important for several reasons. First, because the cost of a house to-day was beyond the reach of the average person, and secondly, because building costs affected practically every member of the community. For instance, if a factory to-day cost three times the pre-war price, that cost indirectly increased the cost of all goods made in the factory, and the result might be that British goods could not be sold abroad because of that high cost.

"Incentives in their Infancy."

Incentives in the building industry were as yet in their infancy. In the engineering industry they had been practised since about 1880. It was Mr. Russon's view that if payment-by-results schemes could be worked effectively in that industry, then they could be made to work in the building industry, despite the many real difficulties prevailing. "In a time of full employment," said Mr. Russon, "it is my opinion that there is no alternative to payment-by-results systems to get increased production and to lower costs. A building trades employer has much to gain by the application of bonusing. Where bonus schemes are worked, an employer can be sure of a fair day's work for a fair day's pay. His general foremen are able to attend to their real job of supervising the work and not constantly to be exhorting the men." The speaker went on to say that, in his opinion, most estimating work in the building industry, especially since the war, had been very largely guess-work because the productivity per man-hour of men on the job had remained unknown. By working incentives, which amounted really to labour cost controls, on every job, the building trades employer would know from week to week whether he was within or outside his costs, and could take the necessary action.

Incentives and the Operatives.

Speaking from his own experience, Mr. Russon said that the men who were working incentives not only were happy in their job but also worked to the fullest extent of their ability and did not wait to be told what job to do next but came to ask for it.

Whilst many difficulties confronted the building industry in connection with the wider application of incentives schemes, he knew that the difficulties were not insuperable, provided that building trades employers were prepared to investigate the problem with the eventual idea that they were going to succeed. Whilst housing was comparatively easy, general contracting work was a little more difficult, and jobbing and maintenance and day work more difficult still.

What had to be done on housing work was to see that all tasks were predetermined in the office prior to the commencement of the work. On general contracting Mr. Russon believed that predetermined targets could only work provided there was an even flow of materials and labour. If either of those became short, it became impossible to plan, and thus nearly impossible to work incentives schemes. Mr. Russon said that the first job was to produce a firm's "yardstick." He believed that each individual firm must have its own yardstick, because no two builders worked alike. Whilst he had heard it said that an encyclopædia was required to cover all the

operations in the building industry, when dealing with incentives the operations could be reduced to a reasonable minimum. "I suggest that what all practical builders are really interested in, in the case of brickwork," said Mr. Russon, "is how many bricks a bricklayer will lay in an hour or, in the case of excavation work, how much it will cost to excavate a yard cube of earth, and so on. The yardstick of a firm need not be more than about one page of constants for each of the trades in the industry, and in all need not exceed 30 foolscap pages. Once its yardstick is completed, all measured work can be bonused in retrospect, that is to say, a builder's surveyor can measure the work executed fortnightly and calculate the cost by multiplying the yards super or cube by the constant in the firm's yardstick. This yardstick can be varied up or down to suit the varying types of building work, and can materially assist in providing factual data of labour output for estimating, costing and the setting of targets."

Productivity and Incentives.

Mr. Russon then quoted figures which he had gathered in regard to the advance in productivity since the working of incentives schemes on various housing jobs and these figures are reproduced below.

Typical examples showing reduced totals of working man-hours per dwelling after institution of incentives (May, 1947)

THE FIRST 12 MONTHS ON INCENTIVES, 1947-1948

	Man-hours		*Percentage*
	Before	*After*	*Advance*
A	3,811	2,821	35 per cent.
B	4,340	2,555	70 ,,
C	2,633	2,320	15 ,,
D	4,111	3,086	33 ,,
E	5,282	3,312	66 ,,
F	3,774	2,579	46 ,,
G	3,708	3,080	20 ,,
H	2,773	2,184	22 ,,

With one exception, the above were all dwellings for local authorities, and averaged 900 to 1,000 ft. sup. The average improvement over the eight jobs was 38 per cent.

WELDING

Research and Welfare

IN his presidential address, delivered to the Institute of Welding, MR. O. V. S. BULLEID, C.B.E., M.I.Mech.E., said that in welding we had an invaluable tool, especially to-day, when saving of weight was at last appreciated. "In welding, he added, "we have a craft which demands a high standard of integrity and therefore it behoves us to develop the training of men to give us the craftsmen we need for the development of welding that lies before us. Do not let us pretend welding can be done by other than craftsmen, but let us see we support the craftsmen using welding and they will give the loyal service needed. In research we have every help from the B.W.R.A., and our duty is to support it and to see that its research is devoted above all to the development of welding by simplifying and cheapening it. Chipping out of welds is a painfully laborious process; progress is being made to render it unnecessary; let us hope the solution will be generally available soon.

"We must not overlook the care of the welders. Damage to sight is something to prevent at all costs. The correct colour for painting welding booths is an important factor as regards eye strain. Bodily fatigue must tend to bad welds and must be avoided by adequate jigging and manipulators. Continuous machine welding can be developed and, if costs are to be reduced, must be. The preparation of the work for welding is another matter requiring attention."

IN PARLIAMENT

Amenities of Britain

ON October 18 and 19 the House of Lords debated, in a second reading, the National Parks and Access to the Countryside Bill.

In the course of the debate Viscount Samuel said they had had many instances lately of industrialists saying that the only place where works could be established was in some beautiful and famous valley, of factories insisting that they must be established on the banks of one of the most lovely of our lakes, and of hotels seeking permission to erect their buildings at the very centre of a beauty spot because it was a beauty spot. The worst example of all was forthcoming this year, in the form of a draft Order which came before the House of Lords, approved by the Minister of Town and Country Planning, for an expenditure of nearly £1,000,000 on extending the notorious Oxford gasworks. Fortunately, they succeeded in getting the matter referred to a Select Committee which, without hearing the objections of the University, but merely the evidence of the Corporation, at once threw out the Order with ignominy. The important thing in that case was that it was the Minister of Town and Country Planning, no doubt under the influence of his more forceful colleague, the Minister of Fuel and Power, who was pushing the matter through. Since the passing of the Town and Country Planning Act certain decisions by the Minister had greatly shaken confidence in the Ministry as an adequate guardian of these great interests.

VISCOUNT ESHER regretted that the Government had not seen their way to grant absolute exemption to National Trust land. The Government had not trusted the Trust completely.

LORD HARLECH raised the question of the threat to Snowdonia by the proposed building of three new hydro-electric power-houses on Snowdon itself. He said it was proposed to site one of them right at the entrance to the famous Pass of Aberglaslyn, which was regarded as one of the chief beauty spots in the whole of Snowdonia. The authorities concerned had been asked to move it 400 yards away, but they refused to budge. And this property was vested in the National Trust. He also complained of the action of the War Office in putting up a big artillery range in the middle of the Snowdon National Park area. Of all the awful builders and architects, the worst were those of the War Office Lands Department. Army barracks had managed through the centuries to combine the maximum of uglification of architecture with the maximum of inconvenience and discomfort to the soldier.

LORD MACDONALD, the Paymaster-General, replying for the Government, agreed that the people of Snowdonia were much concerned about the hydro-electric installations and considered that although they might be necessary, the buildings, where erected, should be made to conform with local beauty and that local stone, and, if possible, local slates, should be used.

The Bill was read a second time.

Prefabricated Houses.

On October 20, in the House of Commons, MR. J. MORRISON asked the Minister of Health how many local authorities had sought an assurance from his department that they would receive an adjustment of the £8 a year maintenance allowance for prefabricated houses so as to make up for the extra cost caused by faulty workmanship and electrical defects.

MR. BEVAN said that no separate record of these applications was kept. He would, however, refer the hon. member to the financial terms upon which these houses were provided, as set out in Appendix IV to the Memorandum on Temporary Accommodation. It would be seen that a local authority would not be entitled to an adjustment merely on the ground that maintenance costs in excess of £8 a house were incurred in any one year.

Rural Housing.

MR. HURD asked the Minister of Health in how many cases in the past year the rural district councils in Berkshire had had to postpone the issue of permits for the building of farm workers' houses by private enterprise because of his department's insistence on the 4-1 ratio in favour of council houses; and if, in view of the adverse effect on food production, he would allow farm workers' houses to be built irrespective of the general quota where the urgency of the need is certified by the county agricultural executive committee.

MR. BEVAN said that the information asked for in the first part of the question was not available. He had no evidence that the existing arrangements for the provision of houses in rural districts of Berkshire adversely affected food production.

Road Haulage Nationalisation.

The Road Haulage Executive, 222, Marylebone-road, London, N.W.1, has issued a gazetteer and an alphabetical list of undertakings acquired up to July 31, 1949.

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EXPORT ENQUIRIES INVITED.

THE PLANNING ACT

An Address by Lord Meston

AT a recent meeting convened by the London and Home Counties Branch of the Incorporated Association of Architects and Surveyors, and held at the Royal Society of Arts, Adelphi, W.C.2, LORD MESTON, barrister-at-law, delivered an address on "The Town and Country Planning Act, 1947." MR. JOSEPH BABBS, chairman of the branch, presided.

Lord Meston said that up to date, apart from Scotland, there had been published approximately 40 statutory instruments, 79 circulars, over a dozen different types of forms and numerous pamphlets and similar documents in connection with the Town and Country Planning Act, 1947. In a previous lecture on this Act he had concentrated on the compensation payable for compulsory acquisition, and his present audience might remember that the basis of compensation for compulsory acquisition varied according to the date on which notice to treat was served. Where this notice was served before August 6, 1947, and compensation had not then been assessed, the compensation would be assessed on the basis of the 1939 standard, subject to certain modifications to be found in the seventh schedule to the Town and Country Planning Act, 1944. Where the notice to treat was served on or after August 6, 1947, and before July 1, 1948, land acquired during this period was to be valued for compensation by reference to its existing use as at the date of the notice to treat, in terms of prices current immediately before January 7, 1947, that being the day on which the Act was first published. Where the notice to treat was served after July 1, 1948, compensation was to be assessed by reference to the existing use value of the land as if it were sold in the open market, subject to special provisions where the interest acquired carried the right to vacant possession, and subject to further adjustment if the land was war damaged or requisitioned.

Developing his subject, the speaker explained the conditions under which compensation might be payable for a refusal of planning permission, or in connection with a purchase notice, or on the revocation or modification of permission to develop. On this last point he said that where planning permission was revoked or modified, any person with an interest in the land might claim compensation from the local planning authority for expenditure incurred in work rendered abortive, and for any other loss or damage directly attributable to the revocation or modification, but he could receive no compensation for depreciation in the value of his interest in the land unless the whole or part of the development charge had been paid, or unless the permission had been granted for development which was exempt from development charge. Expenditure on the preparation of plans, or similar preparatory work, might be included in the claim.

Revocation or modification of permission granted under former interim development orders might give rise to a claim for compensation. So also might the revocation or modification of permissions authorised by development order. But there could be no overlap of compensation payable under these two headings. Compensation might be claimed for interference with authorised uses. A local authority had power to order the removal of buildings, and the stoppage of uses which, although they did not contravene planning control, were in conflict with current planning requirements. Such an order required confirmation by the Minister, and any person who suffered loss or damage as the result of it might claim from the local planning authority compensation for depreciation in the value of the land or other disturbance. Compensation might also be paid for expenses incurred in complying with an order. If the effect of the order was to make the land incapable of reasonable beneficial use, the owner might serve a purchase notice on the local planning authority, and the land might then be purchased by that authority.

Removal of Advertisements.

Claims might arise in connection with an order to remove advertisements. Where the local planning authority required any person to remove an advertisement which was being displayed on the first of August, 1948, or to discontinue the use for advertising of a site which was being used for that purpose on that date, compensation might be claimed from the local planning authority for expenses incurred in complying with that requirement. But such a claim only arose when the advertisements were also being displayed on the seventh of January, 1947. A local authority might revoke or modify an express consent for the display of advertisements. In that case any person who had incurred expenditure in carrying out work connected with the display in question, which work was rendered abortive by the revocation or modification of that consent, might claim compensation.

Building preservation orders might give rise to a claim for compensation. Such orders were concerned with the preservation of buildings of special architectural or historical interest, and a building preservation order might provide, amongst other things, that the local planning authority's consent must be obtained before a particular building was altered or demolished. The order might also provide for the payment of compensation to any person who suffered damage or incurred expenses through refusal of consent to demolish or alter a building.

Claims for compensation might arise in connection with tree preservation orders, and in connection with the removal of war works. Where an owner was required by the local planning authority to remove works carried out on his land by a Government department or local authority in the exercise of emergency powers, the owner might have received compensation under the Compensation (Defence) Act, 1939, which was less than the cost of removal. In such a case, if the owner did the work of removal himself, he might recover under the Town and Country Planning Act, 1947, the full cost of removal, less any compensation which had already been paid to him.

MR. CHARLES H. TAYLOR, president, I.A.A.S., moved a vote of thanks to Lord Meston.

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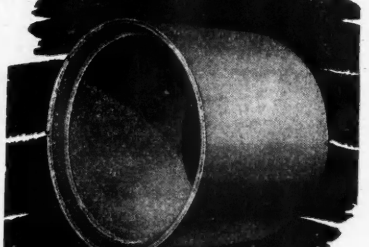

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BUILDING PLANT AND MATERIALS, AUSTRALIA

Purchases in Britain and the Continent

THE purchasing mission representing the Department of Works and Housing, Commonwealth of Australia, Messrs. B. McMahon and G. M. Kerr, has completed negotiations for the purchase of earth-moving and construction plant to the value of £160,000 from Government and semi-official authorities in England. The plant includes tractors, bulldozers, scrapers, power graders, excavators, compressors, concrete mixers, etc. It is expected that further orders will shortly be placed with the same sources of supply.

Orders have been placed with business firms in Britain for the purchase of similar plant to the value of £60,000 and orders for a further £50,000 may possibly be placed within a few days, states the Commonwealth of Australia News and Information Bureau, Australia House, London, W.C.2, which adds that negotiations are now proceeding for the purchase of other items to the value of at least £150,000.

Plant offered on the Continent is to be inspected shortly and, if found satisfactory, may result in orders being placed. Contracts have already been placed with Continental firms for the supply of material for more than £130,000 and further orders will probably be placed within a few days to the value of £50,000 either in England or the Continent. In addition, negotiations are proceeding regarding other material to the value of £275,000.

It is expected that the first consignment of plant will be shipped within a week or two. All the plant being shipped from England is ready for immediate use on arrival in Australia, some of it being destined for the Snowy Mountains hydro-electric scheme. The construction and building materials for which orders have been placed are mostly ready for shipment and should be delivered in Australia by the end of the year or shortly after.

NEWS IN BRIEF

Population Estimates.

Estimates of the sex and age distribution of the civilian population in regions and administrative areas of England and Wales at the end of 1947 have been compiled by the General Register Office and published by H.M.S.O. at 2s. 6d. a copy.

A New Appointment.

Sir Reginald Stradling has been appointed dean of the Military College of Science at Shrivenham in Wiltshire, following his resignation from the post of chief scientific adviser to the Ministry of Works owing to his condition of health.

The late Mr. L. G. Bratt.

We regret to record the death of Mr. Lionel George John Bratt, which occurred at his home in Bud'eigh Salterton on October 19. Mr. Bratt, who had been in retirement for some years and was in his 92nd year, was the founder in 1890 of the company which bears his name —Bratt Colbran, Ltd. Coupled with his powers of creative work were a sincerity and integrity of purpose which earned the respect and friendship of all those with whom he came into contact.

C.L.B. Compulsory Purchase Orders.

The Central Land Board have made compulsory purchase orders in respect of land as follows :—A plot of land of about quarter of an acre at Dennis-lane, Stanmore, Middlesex, belonging to Sir John Fitz-Gerald; two plots together measuring about one and a half acres, at Rook Hill-road, Christchurch, Hants, belonging to Mr. F. C. Schiffer; an area of about one and a half acres in Lyndhurst-road, Exeter, belonging to Mr. R. T. Otton.

The Board have now made 11 Orders since the first in March this year.

The late Mr. F. W. Stratton.

The death is announced of Mr. F. W. Stratton, F.I.O.B., President of the London Master Builders' Association in 1934. Mr. Stratton held many offices in connection with the L.M.B.A.—he joined its council as long ago as 1927—and was a member of many of its committees. He was president of the Builders' Clerks' Benevolent Association in 1936, and was honorary auditor of the Builders' Benevolent Institution up to the time of his death. He was the first chairman of the L.M.B.A.'s Northern Area when areas were started in 1942, and he represented the L.M.B.A. on many of the British Standards Institution committees. In professional life Mr. Stratton was a director of John Knight and Son, of Tottenham.

L.M.B.A. Golfing Society.

The autumn meeting of the L.M.B.A. Golfing Society was held at Stoke Poges on September 27.

In the morning the Captain's prize was won by W. J. Jerram, and the runner-up was D. F. Cox. In a bogey competition run in conjunction with this morning competition, Mr. Cox returned a score of one down to bogey to win the first prize. In the afternoon a Stableford Greensome was played. Three couples tied with 43 points each. Messrs. E. F. Burrows and R. B. Prowting were the winners with the best score for the last nine holes of 36 points.

The annual general meeting of the Society followed at which the following officers were elected: Captain, R. R. Costain; Committee, S. Marshall Andrew, D. F. Cox, P. Fotheringham Parker; hon. secretary and treasurer, P. H. Bates.

Eastern Counties Building Lectures.

The Eastern Federation of Building Trades Employers, believing in the principle that if there is a job to be done the Federation should do it, have arranged an extensive programme of lectures in ten centres in the Eastern Region for this coming winter. The lecturers have been drawn from the members of the Federation, the Development Associations, the local authorities, the professions and the Ministry of Works. The subjects cover a wide range and the programme for each centre is generally one of six lectures.

The various series, we learn, have started well and, in addition to good attendances of members and their staffs, invitations have been accepted by architects, surveyors, builders' merchants, Government and local authority staffs. It is hoped that this ambitious programme will become a permanent feature of the Federation's work.

RECORD CEMENT EXPORTS

Home and Export Figures Up

THE cement industry has claimed new record-making figures for exports. For the first nine months of this year the industry announces close on 5,600,000 tons were delivered in the home market and 1,450,000 tons were exported. The total export figures for the whole of 1948 were 1,628,200 tons, so that the results for the first nine months of this year already indicate the possibility of an even better export record in 1949. The same applies to home figures. In 1948 the home market received 6,893,000 tons, and deliveries for the first nine months this year are only 19 per cent. off that total.

LORD SELBORNE, chairman of the Cement Makers' Federation, says: "These figures show, to anyone who isn't blinded by prejudice, what the industry is doing under private enterprise. We are earning money for Britain. We want to continue to do so. And we do not believe that a nationalised industry could do it half as well."

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TRADE NEWS

New Information Centre.

The Electric Lamp Manufacturers' Association have recently opened their new lighting service bureau at 24, Aire-street, Leeds, 1. The premises have been designed as an information centre where lectures will also be given. The co-ordinating architect was Mr. H. S. Davison, A.R.I.B.A.

Fifty Years with Building Firm.

On October 13 the directors of Rawlings Bros., Ltd. (builders and contractors of Kensington), entertained four of their managerial staff to dinner at the Rembrandt Hotel to celebrate their completion of 50 years' service with the company. They were presented by the chairman, Mr. W. R. Rawlings, with cheques for £50 each, and also with an illuminated address from their colleagues.

A New Publication.

"The Third Link," is the name given to a new publication issued by The Electrical Contractors' Association (Incorp.), Africa House, Kingsway, London, W.C.2. It is a report on the growth and public service of the electrical installation industry. The title is derived from the fact that, with generation and distribution, installation is the third link in the process of bringing the benefits of electricity to industry and the home.

A Film on Plywood Production.

A film, showing the manufacture of resin and the production of plywood from log to the finished product in one of the most modern factories in the United States, was shown by the Timber Development Association Limited at the Gaumont British Film House, Wardour-street, W.1, on October 12.

A number of members of the T.D.A. attended this private showing and an interesting commentary, on the otherwise silent film, was given by a technician of Messrs. Reichhold Chemicals Incorporated, of Detroit, Michigan, manufacturers of phenol resins, at whose factory a number of the scenes were taken.

New Training Centre.

The Coal Utilisation Joint Council have announced the establishment of their new training centre for domestic solid fuel appliance distributors at Vauxhall-walk, Albert Embankment, Vauxhall, S.E.11. In order to ensure that full advantage is taken of new solid fuel appliances, the C.U.J.C. have organised a service and showroom scheme throughout the country to provide good showroom facilities and a full technical advisory service of the fuels and appliances to local authorities, architects, builders and the general public. This scheme, it is claimed, marks a new approach to marketing in the domestic field. It is a co-operative service to the public through appliance distributors, and it is to ensure the necessary standards of technical service by the trade that the training centre has been established at Vauxhall, under the technical management of Mr. W. C. Moss, formerly a chief scientific officer at the Government fuel research station. At the training centre, appliance distributors and their employees can attend courses of practical instruction on the selection, installation, operation and maintenance of domestic solid fuel-burning appliances and on the choice of fuels. The centre has a comprehensive collection of modern fires, stoves, boilers and cookers. It will also serve as a central information and advice centre for local authorities, housing officials and all who are professionally interested in heating.

THE SCOTTISH BUILDER

NEW BUILDINGS

Aberdeen.—Corporation to erect at estimated cost of £320,250, on a site on Cornhill, a new junior secondary school.

Glasgow.—Plans to be prepared on behalf of Robert London, Ltd., for new storage buildings for plant to be erected at Naggs-rd., and of which the architects are Wilson, Hamilton & Wilson, 9, Calder-st., Motherwell-Wishaw. Plans to be prepared for new works buildings to be erected at 327 to 365, Scotland-st., for Ritchie, Ltd., and for which the architect is Joseph B. Park, 203, West George-st., Glasgow, C.2.

Glasgow.—Plans to be prepared for classrooms, cloakrooms, etc., including new sanitary conveniences, at The Whitehill Public School, Armadale-st., Dennistoun, for which the architect is John MacNab, 129, Bath-st., Glasgow, C.2.

Glasgow.—Plans to be prepared for alterations and additions to Gallowgate factory, for MacCrae & Drew, Ltd., Colinslee Works, Paisley, and also for alterations and additions at Colebrooke-ter. for C. MacCracken, for which the architects are Alexander D. Hislop & Campbell, United Kingdom Assurance Corporation-bldgs., St. Vincent-st., Glasgow, C.1.

Greenock.—Plans in hand for houses to be erected at The Lyle-rd., and for which the architect is Albert MacMillan, 4, Caledonian-cres., Gourock, Renfrewshire.

Larkhall.—Plans in hand for ice-cream factory at Wellgate-st., for which the architects are Frederick Smith & Partners, 4, Regent-st., Hamilton Cross, Hamilton.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

OCTOBER 29.

†**Pembrokeshire C.C.**—Erection of Puncheston (New) County Primary School. Walter Barrett, M.B.E. (A.), County A., County Offices, Haverfordwest. Dep. £5 5s. Tenders by November 12.

OCTOBER 31.

†**Plymouth T.C.**—Erection of Primary School at Knowles Battery. Louis de Soissons, A.R.A., & Partners, 11, The Crescent, Plymouth. Dep. £3 3s. (payable to Corporation). Tenders by November 22.

NOVEMBER 1.

†**Bournemouth C.B.**—Infants' school at Mount-rd., South Kinson. Ronald A. Phillips (F.), Bush House, 15, Christchurch-rd., Bournemouth. Dep. £2 2s. Tenders by November 25.

NOVEMBER 3.

†**Malden and Coombe T.C.**—23 houses at The Manor Drive. B.E., Municipal Offices.

†**Newcastle-on-Tyne Regional Hospital Board.**—Alterations and additions to X-Ray Dept. at Newcastle General Hospital. Secretary to the Board, "Dunira," Osborne-rd., Newcastle-on-Tyne, 2.

†**Stevenage Development Corporation.**—Erection of houses on several sites. Chief Administrative Officer, Aston House, nr. Stevenage.

†**Surrey C.C.**—Secondary school at Yeomans Bridge, Ash. County A., County Hall, Kingston-on-Thames. Dep. £2 2s.

†**Surrey C.C.**—Adaptation of Reigate Priory to form secondary school. County A., County Hall, Kingston-on-Thames. Dep. £2 2s.

†**Worthing T.C.**—60 houses at Maybridge estate, section 4. B.E. & S. Town Hall. Dep. £2 2s.

NOVEMBER 4.

†**Beds C.C.**—Erection of County Junior Mixed School, Kempston. County A., Shire Hall, Bedford. Dep. £2 2s.

†**Oakham U.D.C.**—24 houses with site development off Burley-rd. F. J. Lenton & Partners, 16, Broad-st., Stamford, Lincs.

†**Staffs C.C.**—Adaptation to existing premises to form drawing offices at Wednesbury County Technical College. A. C. H. Stillman, Architect & S., County Ed. Committee, Green Hall, Lichfield-rd., Stafford.

†**Staffs C.C.**—Erection of County Primary School at Ocker Hill, Tipton. A. C. H. Stillman, Architect & S., County Ed. Committee, Green Hall, Lichfield-rd, Stafford. Dep. £2 2s.

†**Wandsworth B.C.**—Four houses at Bangalore-st., Putney. T.C., Municipal-bldgs.

NOVEMBER 5.

††***Grosby T.C.**—Ladies' lavatories at Lorne-rd. and ladies' and gentlemen's lavatories at Coronation-rd./Carnegie-ave. B.E. & S., Town Hall, Waterloo, Liverpool, 22. Dep. £2 2s.

††***Essex C.C.**—Extension to garages at Colchester Police Station. H. Conolly (F.), County A.

†***Essex C.C.**—Formation of ambulance station at 58, New-st., Dunmow. County A.

North Cotswold R.D.C.—36 houses at 4 sites. Thomas Rayson (F.), 29, Beaumont-st., Oxford. Dep. £2 2s.

†**Ogwen R.D.C.**—4 houses at Caerhun with roads, sewers, etc. C., Tanyfynwent Offices, Bangor. Dep. £2 2s. Tenders by November 18.

†***St. Albans T.C.**—Additional workshops at Highways Depot. City E. & S., 16, St. Peter's-st. Dep. £2 2s. each. Tenders by November 28.

††***Worcs C.C.**—Infants' school and dining block at The Broadway, Norton, Stourbridge, Jackson & Edmonds, 65, New-st., Birmingham, 2. Dep. £2 2s. Tenders by November 23.

NOVEMBER 7.

†***Cardiganshire E.C.**—School canteen at Aberystwyth. G. R. Bruce (A.), County A., County Hall, Aberayron. Dep. £1. Tenders by December 1.

†***Cardiganshire E.C.**—Canteen at Cardigan County Secondary School. County A., County Hall, Aberayron. Dep. £1. Tenders by December 1.

†***Cardiganshire E.C.**—Extensions to Secondary School at Ardwyn, Aberystwyth (cost about £26,000). G. R. Bruce (A.), County A., County Hall, Aberayron. Dep. £2 2s. Tenders by December 1.

†***Cardiganshire E.C.**—Extensions to Secondary School at Aberayron (cost about £90,000). G. R. Bruce (A.), County A., County Hall, Aberayron. Dep. £2 2s. Tenders by December 1.

Harpenden U.D.C.—Roads and sewers at Batford North. E. & S., Harpenden Hall. Dep. £1 1s.

***Litherland U.D.C.**—(a) 36 flats at Field-la., and (b) 15 shops and 30 flats at Kirkstone-rd., North Litherland. Quiggin & Gee, chartered architects, Harley-bldgs., 11, Old Hall-st., Liverpool, 3. Dep. £2 2s. each.

NOVEMBER 8.

†**East Sussex C.C.**—Additional classroom extension at Bexhill County Grammar School for Girls. J. Catchpole (A.), County A., County Hall, Lewes. Tenders by November 25.

NOVEMBER 9.

***Gt. Yarmouth C.B.**—Dining-hall and scullery at Hospital Secondary Modern School. B.E., Town Hall. Dep. £1 1s.

†**Leeds Regional Hospital Board.**—Extensions to dispensary, Royal Infirmary, Duckworth-la., Bradford. Wm. A. Shee, Secretary to the Board, 29-31, Eastgate, Leeds, 2. Dep. £2 2s. Tenders by November 23.

††**Lincoln (Parts of Kesteven) C.C.**—Hutted fire stations at Corby and Brant Broughton. F. J. Lenton & Partners, 16, Finkin-st., Grantham.

***Southend-on-Sea C.B.**—Kitchen and dining-room at Southchurch Hall High Schools. Architect to the E.C., 30, Alexandra-st. Dep. £2.

††***Walsall C.B.**—Erection of infants' dept. of New Alumwell-rd. County Primary School, No. 40. B.E. & S., County House. Dep. £3 3s. Tenders by November 28.

***York T.C.**—Filter plant house at Yearsley Baths. City E. & Architect. Dep. £1.

NOVEMBER 10.

††***Northumberland C.C.** — County primary school at Langley-ave., Monkseaton. County A., County Hall, Newcastle-on-Tyne, 1.

NOVEMBER 11.

Bowland R.D.C.—4 houses at Grindleton, Needham & Thorp (F. & A.), 6, High Petergate, York. Dep. £2 2s.

†***Keighley T.C.**—Erection of Guard House, County Junior School. E. G. Felgate (A.), Boro' A. Dep. £2 2s.

††***Wandsworth B.C.**—103 dwellings, Rinaldo-st., Balham, S.W.12. T.C.

††***Wandsworth B.C.**—Superstructure for 93 dwellings, boiler-house and electricity substation, Wimbledon Park estate, Southfields, S.W.18. T.C.

NOVEMBER 12.

††***Gateshead C.B.**—Workshop block at new Technical College, East Park-rd. H. J. Cook (A.), Chief A., Swinburne-st. Dep. £5 5s. Tenders by November 28.

Rugby R.D.C.—22 houses at Clifton-upon-Dunsmore. D. G. McVinnie, M.I.Mun.E., S., 24, Warwick-st. Dep. £2 2s.

NOVEMBER 14.

***Chester R.D.C.**—(a) 20 houses and incidental work at Dodleston; (b) roadworks and main drainage. Douglas Minshull & Co., 6, Abbey-sq., Chester. Dep. £2 2s.

***Chester T.C.**—Brick administrative building, boiler-house, cold frames, etc., at Westminster Park Nursery, contract No. 2. City E. & S., Municipal Offices.

Manchester T.C.—Two additional classrooms at St. Dunstan's R.C. School, Moston. City A. Dep. £1 1s.

†**Pembrokeshire C.C.**—Erection of Fishguard Grammar/Modern School. County A., County Offices, Haverfordwest. Dep. £5 5s. Tenders by December 6.

***Welwyn Garden City U.D.C.**—Erection of filter house at Lee Valley Swimming Pool. E. & S., Council Offices. Dep. £2 2s.

NOVEMBER 15.

Huddersfield T.C.—Hutted day nursery at Leeds-rd. Boro' A., High-st.-bldgs. Dep. £2 2s.

***Southend-on-Sea C.B.**—Foundations, boiler-house and other works at New Comprehensive High School, Belfairs, Leigh-on-Sea. Architect to the E.C., 30, Alexandra-st., Southend-on-Sea. Dep. £1.

††***West Riding C.C.**—Building works in connection with the erection of 11 schools. County A., County Hall, Wakefield. Dep. £2 2s. each. Tenders by December 6.

NOVEMBER 19.

Settle (Yorks) R.D.C.—20 houses at Park-ave., Hellifield. E. & S., Town Hall. Dep. £2 2s.

***Shepton Mallet U.D.C.**—Six houses at Stevens-cl., Ridgway. G. F. Hawkins, S., Market-pl. Dep. £2 2s.

Warsop U.D.C.—50 dwellings with paths and drainage on 2 sites at Market Warsop. C., Town Hall. Dep. £2 2s.

NOVEMBER 21.

***Belper U.D.C.**—Ten houses with road works at Acorn-dr. John L. Bakewell (L.), 25, Chapel-st., Belper. Dep. £2 2s.

***Belper U.D.C.**—Ten houses with road works at Swinney-la., No. 2 site. John L. Bakewell (L.), 25, Chapel-st, Belper. Dep. £2 2s.

Saltash T.C.—5 pairs of houses at Liskeard-rd. B.S., Church House. Dep. £5 5s. (by cheque).

NOVEMBER 22.

Matlock U.D.C.—14 bungalows at 2 sites. E. & S., Town Hall. Dep. £3 3s.

NOVEMBER 24.

***Lincoln C.C.**—Second instalment of Three Form Entry Infants' School, Lincoln-gdns., Scunthorpe. County A., County Offices, Lincoln.

NOVEMBER 25.

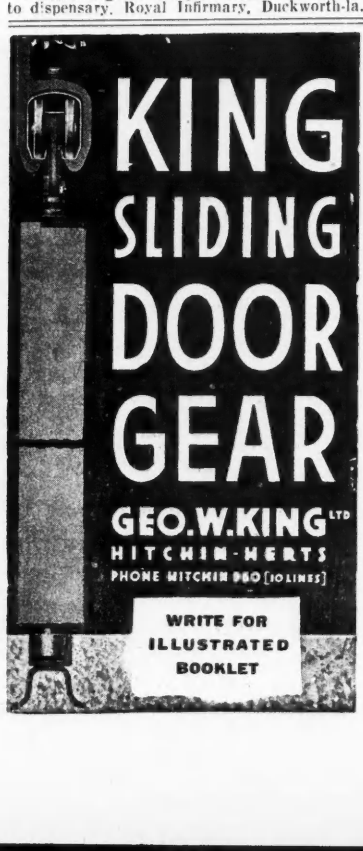
***Wokingham R.D.C.**—(1) Roads and sewers; (2) erection of 8 houses and 2 bungalows off Garde-rd., Sonning-on-Thames. Eric G. V. Hives (L.), 3, Cork-st., Reading. Dep. £2 2s. each section.

NOVEMBER 28.

***Corporation of London.**—Demolition of anti-tank trenches, anti-tank obstacles, etc., at Epping Forest. City S., 55-61, Moorgate, E.C.2. Dep. £3 3s.

***Derby C.B.**—Kitchen at Burton-rd. T. W. East (F.), Boro' A., The Council House. Dep. £2 2s.

***Peterborough Joint Education Board.**—Erection of Infants' School at Brewster-ave., Wood-



ston. A. W. & H. J. Wilson, architects and surveyors, District-chbrs., Cumbergate, Peterborough. Dep. £2 2s.

*Sale T.C.—34 dwellings at Baguley-la. estate. B.S., Town Hall. Dep. £4 4s.

*States of Guernsey.—Six houses at Sandy Hook, St. Sampsons. G. Heggs, States E., States Office. Dep. £1

NOVEMBER 30.

*Bootle C.B.—Infants' School, St. John's-rd., B.S., Town Hall. Dep. £2 2s.

DECEMBER 1.

*Shropshire E.C.—New Primary Schools at Newport and Ludlow. Hobbiss & Hobbiss, 36, Waterloo-st., Birmingham, 2. Dep. £2 2s.

DECEMBER 2.

*Brighton C.B.—Farmhouse, farm cottages and farm buildings at Balsdean Farm, Kottingdean. Waterworks E., 12, Bond-st. Dep. £2 2s.

NO DATE.

*Burnley C.B.—Drainage, foundations and walling-up to ground-floor level of new girls' high school. B.S., Town Hall. Dep. £1 1s.

Shepshed U.D.C.—34 houses at Glenmere estate. McCarthy, Collings & Co., architects, 187, Forest-rd., Coalville. Dep. £2 2s.

*Windsor T.C.—44 houses at Imperial-rd. site. B.E., 16, Alma-rd. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

NOVEMBER 12.

†*Gateshead C.B.—Heating and hot water installation at workshop block, East Park-rd. H. J. Cook (A.), Chief A., Swinburne-st. Dep. £2 2s.

NOVEMBER 14.

East Sussex C.C.—County S. (Materials.)

NOVEMBER 26.

New Windsor Royal Boro'.—B.E. & S. (Materials.)

ROADS, SEWERAGE AND WATER WORKS

NOVEMBER 4.

†Nuneaton T.C.—Roads and sewers at Marston estate. B.S., Council House. Dep. £2 2s.

†Staffs Local E.C.—Site works for Hempstalls Farm County Primary Junior and Infants' School, Newcastle-under-Lyme. B.E. & S., Lancaster-bldgs., High-st., Newcastle-under-Lyme. Dep. £2 2s.

NOVEMBER 7.

Spalding R.D.C.—Sinking of borehole at Pinchbeck. Silcock & Simpson, 10, Park-row, Leeds 1. Dep. £3.

NOVEMBER 9.

Staines U.D.C.—Roads and sewers at Kingston-rd. site. E. & S. Dep. £2 2s.

Taunton R.D.C.—Sinking of five trial boreholes. Ross, Hooper & Harvey, 38, Market-pl., Chippenham. Dep. £1.

Watford T.C.—Construction of Leavesden sewerage scheme. B.E. & S. Dep. £2 2s.

NOVEMBER 11.

†Sandy U.D.C.—Drainage works at Ivel-rd., Beeston. Binnie, Deacon & Gourley, Artillery House, Artillery-row, S.W.1. Dep. £5.

NOVEMBER 12.

Hyde T.C.—Roads and sewers at Harbour Farm estate. B.S.

*Middlesbrough C.B.—Repairs and resurfacing of school playgrounds. Director of Education, Education Offices, Woodlands-rd. Dep. £1 1s.

NOVEMBER 14.

Croydon C.B.—Drainage works at New Addington estate. B.E. Dep. £2 2s.

Deal T.C.—Roads and sewers at Orchard-ave. site. B.E., Municipal Offices. Dep. £2 2s.

NOVEMBER 16.

Doncaster C.B.—Sewage pumping station at Wilby Carr, Cantley. B.S. Dep. £3 3s.

NOVEMBER 18.

Cirencester R.D.C.—Sewerage and sewage disposal works at Lechlade. A. H. S. Waters, M.I.C.E., 25, Temple-row, Birmingham 2. Dep. £3 3s.

NOVEMBER 21.

Chichester T.C.—Roads and sewers and site works at Parklands. City E. & S. Dep. £2 2s.

Whiston R.D.C.—Construction of Rainhill sewerage and sewage disposal works. Husband & Co., 388, Glossop-rd., Sheffield 10. Dep. £15 15s.

NOVEMBER 22.

Matlock U.D.C.—Roads and sewers at Hurst Farm site, No. 2. E. & S., Town Hall. Dep. £3 3s.

South Cambridgeshire R.D.C.—Roads and sewers at various housing sites. County S., Shire Hall, Castle Hill, Cambridge. Dep. £2 2s.

NOVEMBER 23.

Huntingdon R.D.C.—Construction of main drainage at Bampton. Pick, Everard, Keay & Gimson, 6, Millstone-la., Leicester. Dep. £2 2s.

NOVEMBER 26.

*Dublin.—Site development works at Southern Regional Sanatorium, Sorsfieldcount, Glanmire, Co. Cork. P. O. Cinneide, secretary, Dept. of Health, Custom House, Dublin. Dep. £10 10s.

"THE BUILDER" PRICES

READY MIXED WHITE LEAD PAINT

Associated Lead Manufacturers, Ltd., announce that prices for retail sales of ready mixed white lead paint as from October 19, are as follows :—

	Flat Glossy and Undercoating		*Semi-prepared*		
	s.	d.	s.	d.	
In 1-gall tins free ..	51	1½	56	1½	p. tin nett
,, ½-gall. ,, ,, ..	25	11½	28	5½	,, ,,
,, ¼-gall. ,, ,, ..	13	4½	14	7½	,, ,,
,, 1-pt. ,, ,, ..	6	11½	7	7	,, ,,
,, ½-pt. ,, ,, ..	3	9	4	1	,, ,,

Note.—With regard to the 1-gall., ½-gall., and ¼-gall. tins, these may be sold to the *bona fide* trade buyers at the following prices.

	s.	d.	s.	d.	
1-gall. tin ..	49	1½	54	1½	p. tin nett
½ gall. ,, ...	24	11½	27	5½	,, ,,
¼-gall. ,, ...	12	10½	14	1½	,, ,,

GENERAL BUILDING WORK (LONDON)

Balham.—FLATS.—Sketch plans by R. G. Covell, F.R.I.B.A., 299, Mitcham-rd., Tooting, S.W.17, for 50 flats at Trinity-rd. have been approved by Wandsworth B.C. Housing Comm. Smith & Bowl, 289a, Terminal House, Grosvenor-gdns., S.W.1, are the quantity surveyors and John Liversedge & Associates are the consulting structural engineers.

Balham. — FLATS. — Wandsworth Housing Comm. have approved sketch plans by Boro' A. for 103 flats at Rinaldo-st.

Camberwell.—LAND FOR BUILDING.—Land is to be acquired by L.C.C. at Westhall and Wyndham-rds., upon which it is proposed to erect a new secondary school (300 places).

Fulham.—LAND FOR BUILDING.—Land in Horder-rd. and Burnfoot-ave. is to be acquired by L.C.C., upon which it is proposed to erect a nursery school.

Hammersmith. — SCHOOL WORKSHOP. — L.C.C. Ed. Comm. have approved a scheme prepared by the council's architects for a metalwork and brickwork centre at North Hammersmith Secondary School. Est. cost, £5,240.

Holborn.—IMPROVEMENTS.—L.C.C. Ed. Comm. propose converting roof playground at Kingsway day college into five classrooms at est. cost of £7,025. Plans by L.C.C. architects.

Hornchurch.—SHOPS AND FLATS.—U.D.C. Surveyor has prepared a scheme for 16 shops with flats above on Hacton Farm estate.

Islington.—LAND FOR BUILDING.—Land is to be acquired by L.C.C. at Pemberton-gdns. and St. John's-gr., upon which a new primary school is to be erected, possibly in stages.

New Oxford-st.—GOVERNMENT OFFICES.—Digby Solomon, B.Sc.(Lond.), F.R.I.B.A., 21, Bloomsbury-way, London, W.C.1, has been appointed architect for proposed Government offices on site of 77-91, New Oxford-st., W. Site clearing work has already begun.

Poplar.—SCHOOL.—L.C.C. Ed. Comm. has approved preliminary plans prepared by Yorke, Rosenberg & Mardall, F.R.I.B.A., 2, Hyde Park-pl., Bayswater-rd., W.2, for a primary school (520 places) at Ricardo-st. Est. cost, £118,224.

Putney.—HOUSES.—Wandsworth B.C. Architect is preparing plans for four houses on the Bangalore-st. site. Quantity surveyors, Henry Riley & Sons.

Stoke Newington.—SHOPPING CENTRE, ETC.—L.C.C. Housing Comm. propose erecting 14 shops, civic restaurant, 12 maisonettes, 12 garages, estate office, with living accommodation above, etc., at Woodberry Down Estate. Total est. cost, £71,700. Plans by L.C.C. Director of Housing and Valuer.

Streatham.—FLATS.—Wandsworth B.C. Housing Comm. have approved preliminary plans for 124 flats as second stage of development at Cowper's-row. Architect, Clifford E. Culpin, F.R.I.B.A., 3, Southampton-pl., W.C.1.

Streatham.—FLATS.—Wandsworth Boro' A. has submitted to L.C.C. for approval revised detailed plans for proposed 24 flats at Hopton-rd. (scheme No. 1).

Tooting.—FLATS.—Wandsworth B.C. Housing Comm. have approved revised sketch plans by Basil Hughes, F.R.I.B.A., F.R.I.C.S., 34, Queen Anne-st., W.1, for 48 flats as first stage of Hazelhurst-rd. scheme.

Wandsworth. — MAISONETTES. — B.C. Housing Comm. propose 12 maisonettes on sites of Nos. 39-47 (odd), Chelsham-rd. to plans by Boro' A. Andrew S. Roberts & Partners, 17, Cromwell-pl., S.W.7, are the quantity surveyors.

Wandsworth.—FLATS.—Boro' A. has prepared sketch plans for 191 flats as second stage of development at Wimbledon Park-rd., Southfields.

Wandsworth.—FLATS.—Tenders are soon to be invited for the erection of 93 flats and boiler-house, which form first stage of development of Wimbledon Park-rd. scheme and for which the Boro' A. has prepared plans.

Wandsworth.—LAND FOR HOUSING.—L.C.C. have approved B.C.'s proposal to acquire adjoining sites of "Bell Lodge," Upper Tooting-rd., and No. 126, Upper Tooting-rd. for housing development. No plans have yet been formulated.

Wandsworth.—LAND FOR HOUSING.—B.C. Housing Comm. propose acquisition of sites of Nos. 19-27 (odd), Acris-st. for ultimate redevelopment for permanent housing purposes.

Wembley.—CINEMA, SHOPS AND FLATS.—Plans for a cinema, 15 shops with flats above at Preston-rd., junction with Carlton-ave. East, are being prepared by Leslie C. Norton, 16, Clifford-st., London, W.1.

Wembley. — HOUSES. — F. H. Shearley, L.R.I.B.A. 27, Kymberley-rd., Harrow, is the architect for 16 houses in Priory-gdns. and Priory Hill-ave.

Wembley.—OFFICE ADDITIONS.—Wallis, Gilbert & Partners, F.R.I.B.A., 5, Cromwell-rd., London, S.W.7, are architects for office additions for Wrigley Products, Ltd., East-la.

Wembley.—HOUSES.—Architects' Dept., F. & C. Costin, Ltd., builders, 226, Kenton-rd., Harrow, is preparing plans for four houses on sites of 1, 3, 6 and 8 Bulmer-gdns.

Wembley.—HOUSES.—Architects' Dept., F. & C. Costin, Ltd., builders, 226, Kenton-rd., Harrow, is preparing plans for six houses on sites of 200-210, Regal-way.

Westminster.—LAND FOR BUILDING.—Land in Tufton-st. is to be acquired by L.C.C. at total est. cost of £12,250, upon which it is proposed to erect a new college.

(PROVINCIAL)

Accrington.—"The Mount," Whalley-rd., is to be adapted as additional accommodation for nurses by Blackburn & District Hospital Management Committee, at £8,000.

Alderley Edge.—U.D.C. propose additional 14 houses, at £18,464.

Batley.—T.C. seek loan of £68,000 for 28 houses and 44 flats at Staincliffe Estate. Boro' S., T. Mossop.

Benton (Northumberland).—Council of King's College are to carry out additions to Henderson Hall, Blaydon, to provide accommodation for another 200 students. Contracts will be decided shortly. Architects, Mauchlen & Weightman, 12, Saville-row, Newcastle-on-Tyne.

Blyth (Northumberland).—British Railways are to build a new station to serve Newsham-rd. housing site.

Bolton.—B.C. approved plans for: Extensions to cardroom, Mill Hill-st., for Mill Hill Spinning Co., Ltd.; canteen, Lower Bridgeman-st., for Hodgkinson & Gillibrand, Ltd.; additions to Re-employ factory, Manchester-rd., for Disabled Persons' Employment Corporation, Ltd.

Brighouse.—B.C. approved plans for 20 houses at Leeds-rd., Hipperholme, for A. Pickles; six houses, Woodhouse-la., for Iredale Bros.; works extensions, Denholmegate-rd., for W. & J. Glossop, Ltd.

Bromsgrove.—U.D.C. approved plans for:—rebuilding of Belle Vue garage, Marlbrook, for Parkwood Bros.; extensions to Hawthorn social club, Rubery; alterations to Market-st. for Bar Productions, Ltd.; accepted M.O.H. offer of 30 aluminium bungalows.

Burnley.—E.C. to acquire site at Ivy Bank for new girls' high school. Est. cost, £190,000.

Caernarvonshire. — E.C. received M.O.E. approval for kitchen and dining-room at Portmadoc Grammar School, at £30,000. County A., W. L. Jones, L.R.I.B.A., A.I.Struct.E.

Chester.—T.C. have acquired "Kenwyn," Dee Banks, for adaptation as hostel for aged. E. Mainwaring Parkes, County A.

Coventry.—T.C. propose slipper baths and washhouses at Primrose Hole, at £27,000; municipal laundry at Livingstone-rd. at £45,000, and swimming and slipper baths at Tile Hill, at £125,000. Donald E. E. Gibson, City A.

Droitwich.—T.C. approved erection of factories at Hampton-rd. site for Bromsgrove Casting Co., R. K. New, Stourport, and Morgans (Tyseley), Ltd.

Durham.—Additions are to be made by County E.C. to secondary and junior schools at Birtley, Horden, Waterhouses, Ryhope, Usworth, Bishop Auckland, Easington, High Felling, Billingham South, Consett, Esh Winning, Murton, Sedgefield and Wheatley Hill. Plans by the County A., Court-la., Durham.

Durham.—C.C. proposes a secondary grammar school for 650 at Consett.

Easington.—R.D.C. surveyor is preparing scheme for erection of 50 chalets at Crimdon Park, at est. cost of £19,000.

Felling-on-Tyne.—Layout plans have been prepared for 420 houses at Wardley, for U.D.C. Question of houses for old people being considered. D. W. Green is Council's Housing A.

Gateshead.—It is proposed to make alterations to the blocks at Fountain View, formerly the Poor Law Institution, and to convert the upper floor into a sick bay. Plans by the Boro' A., H. T. Cook, Town Hall, Gateshead, have been approved.

Gateshead.—T.C. received M.H. loan sanction in respect of following: £7,648 for the erection of five flats and one shop on the Blue Quarries Estate; £12,026 for 10 houses in Beechwood-gdns.; £16,402 for six shops and flats at Coach-rd. estate; and £27,927 for 22 houses on Lyndhurst Estate.

Haltwhistle.—Offices are proposed by Kilfrost, Ltd., St. Nicholas'-bldgs., Newcastle-on-Tyne. Architects, Cackett, Burns Dick & McKellar, 21, Ellison-pl., Newcastle-on-Tyne.

Hebburn-on-Tyne.—R. Burke, 10, Lambton-rd., Newcastle, is architect for a R.C. school.

Houghton-le-Spring.—U.D.C. has applied for sanction to build 52 houses at the Racecourse site, at £65,000. Estimates are to be obtained for the erection of 114 "Easiform" houses on the Barnwell Estate, Penshaw. V. J. Hunter is U.D.C. Surveyor.

Keighley.—E. F. Felgate, Boro' A., has prepared plans for a new junior school at Guard House.

Lancs.—E.C. received M.O.H. approval for 20 new schools in 1950. G. Noel Hill, County A.

Lancaster.—T.C. seek loan of £5,000 to erect 'bus shelters.

Litherland.—U.D.C. propose community and shopping centre at Kirkstone-rd. North, at £91,000.

Liverpool.—E.C. seek loans of £9,080 for extensions to Booker-av. Primary School; £7,563 for kitchen and dining-room at St. Alexander's R.C. School; propose rebuilding and extension at Northumberland-st. Clinic, at £5,500.

Manchester.—T.C. approved extensions to Rusholme Telephone Exchange by G.P.O.; seek loans of: £42,500 (for teachers' training college of Long Millgate); £41,967 (for additional accommodation at Newton Health Tech. Sch.); £8,155 (for additional accommodation at Openshaw Health Tech. Sch.); £182,019 (for additional accommodation at Newall Green County Sec. Sch.); £180,459 (for additional accommodation at Moss House County Sec. Sch.); £109,470 (for additional accommodation at R.C. Sec. Sch., Roundwood-rd.).

Manchester.—Regional Hospital Board propose adaptation of V.D. clinic as out-patients' department at Fleetwood Hospital; new pathological department at Sharoe Green Hospital, Preston; extension of dispensary at Blackburn Royal Infirmary; adaptations at Bramley Mead Maternity Home, at £8,997; adaptations at Woodsleigh Training School to provide additional accommodation, at £10,550; adaptations at "Hopelands" and "Fairleigh," Salford, as additional accommodation for nurses at £10,800; new boiler-house and boilers at Christie Hospital and Holt Radium Institute, Didsbury, at £30,000; alterations and additions to existing staff houses at Whittingham Hospital, at £5,811; modernisation of male nurses home and reroofing part of female wards at Prestwich Hospital, at £5,000. T. Duffy, architect to the Board.

Mansfield.—B.C. approved plans for: Rebuilding workshop and store, Newgate-la., for Mansfield Leather Co.; alterations and additions to factory, Belvedere-st., for Foister, Clay & Ward, Ltd.; bakery and store, Chesterfield-rd. South, for W. Brown; loading shed, Sandhurst-av., for Mansfield Standard Sand Co., Ltd.

Market Drayton.—U.D.C. propose a mortuary at Butts-rd. Surveyor, D. C. Nicol.

Melton Mowbray.—U.D.C. propose 50 houses. Plans by W. H. Jervis, Egerton Lodge, Melton Mowbray.

Meriden.—R.D.C. to erect 58 houses at Balsall, eight at Curdworth, and four at Nether Whitacre.

Middlewich.—U.D.C. have acquired "Chadwick Fields," for housing purposes; to invite Cheshire C.C. to adapt the house as maternity home or home for aged.

Morpeth.—Boro' E. (F. K. Perkins) is preparing plans for T.C. for houses in Spelvit-la.

Newcastle-on-Tyne.—N. H. Chapman & Co., Ltd., furnishers, 77, Northumberland-st., Newcastle, are to construct a loading dock at 26-28, Great North-rd. Revised plans have been approved for a factory in Blenheim-st., for Bestwear (Newcastle), Ltd. (architect, C. Solomon, St. Mary's-pl., Newcastle). Amended plans by Marshall & Tweedy, Grainger House, Blackett-st., Newcastle, for alterations to the Throat Nose and Ear Hospital at Rye Hill, have been approved.

Newcastle-on-Tyne.—Extensions are to be made to the Tynes works of S. T. Taylor & Son. Architect, T. Cornelius, 33, Elmfield-gdns., Gosforth, Newcastle.

Newcastle-on-Tyne.—E.C. is negotiating for land in west end of city for proposed secondary grammar and high schoo'.

Newcastle-on-Tyne.—Alterations are proposed in Nun-st. for J. Farnon, Ltd., drapers, etc., to plans by C. Solomon, St. Mary's-pl., Newcastle.

North Cork.—W. F. Harvey, assistant county secretary, has announced a proposal to erect 420 rural cottages in North Cork area in addition to other dwellings now being constructed there.

North Shields.—William Stockdale, Howard-st., North Shields, is architect for rebuilding of part of Wesley Hall, Coach-la.

Oldham.—B.C. to convert cloakrooms to classrooms and erect new two-storey block of cloakrooms at Limeside County School; preparing plans for primary school at Limehurst; propose extensions to Haven House Nursery; to invite tenders for 130 houses; approved plans for: Alterations and extensions at 351, Featherstall-rd., for O.I.C.S., Ltd.; rebuilding of tripe works, Byron-st., for T. Hulme; extensions and alterations at 110, Yorkshire-st., for Thos. Cook & Son, Ltd.; alterations and staff room at 70, Yorkshire-st., for Singer Sewing Machine Co., Ltd.; barrel store at Henshaw-st., for Welcome Brewery Co., Ltd.; alterations and extensions to Moorside Garage, Ripponden-rd., for A. C. Haworth; extensions to card rooms at Olive Hill, Quebec-st., for Olive Mill Co., Ltd.; new shop premises, Yorkshire-st. and Scholes-st., for Montague Burton, Ltd.; works extensions at Marmaduke-st., for Condor Ironworks, Ltd.; loading bay at Moorside Mills, Ripponden-rd., for Thos. Mellowdew & Co., Ltd.

Overton.—R.D.C. propose six houses at New Hall-la., Bronington.

Pwllheli.—T.C. propose nine houses on Bron-y-De site. Approved plans for: Reconstruction of warehouse at the Goods Station for Eifronydd Farmers' Association; lay-out of 20 houses at Ala-rd., for J. L. Evans; to acquire South Beach Hotel for conversion into flats.

Rochdale.—B.C. approved plans for: Extensions and alterations at 29, Cheetham-st., for Brandon & Clegg, Ltd.; storerooms at Milnrow-rd., for T. Robinson & Sons, Ltd. B.C. to adapt "Harefield" House as occupation centre and "Brooklyne" as home for aged; to prepare plans for Kirkholt Secondary Modern School. M.O.E. approved plans for Kirkholt County Junior School, at £106,250, and Delta Infants' East School, at £58,630.

Rotherham.—B.C. approved plans for: Rectifier house, The Ickles, for Steel Peach & Tozer; extensions, Wortley-rd., for Robert Jenkins & Co., Ltd.; maintenance workshop at Doncaster-rd., for Rotherham Co-op. Society, Ltd.; extensions to Whiston Grange, Moorgate-rd., for B.S.A. Co., Ltd.; extensions to offices at Fullerton-rd., for the London and Scandinavian Met. Co., Ltd.; showrooms at junction of Wellgate and Hollowgate, for Central Motor Works, Ltd.; canteen at Drummond-pl., for Gummers, Ltd.; extensions of drop stamp forge at Grange Mill-la., for Ambrose Shardlow & Co., Ltd.; 20 houses at Warren-dr., for A. Watson.

Runcorn.—R.D.C. propose new council chambers at Castle Park, Frodsham, at £6,800. Plans by Surveyor, A. B. Cunningham.

Salford.—T.C. propose health centre on Fairhope estate. City E., W. A. Walker.

Silsden.—U.D.C. propose further 20 houses at Dradishaw-rd. estate. Surveyor, J. R. Wade.

Smethwick.—T.C. propose infants' school in Warley area and junior school in Sandwell area. Plans by Roland Fletcher, Boro' E.

South Westmorland.—R.D.C. propose six or eight houses at Storth and six on Drovers-way estate.

Stafford.—G.P.O. seek site for a new telephone exchange.

Staffs.—E.C. received M.O.E. approval for college of further education at Brierley Hill, at £70,000.

Standish.—U.D.C. propose 18 houses on Coronation-rd. site and further 22 on Grove-la. site.

Staveley.—U.D.C. to lease site between Turner-dr. and Summerskill Green to C.C. for aged persons' hostel; to seek loan for development of Ringwood Park swimming bath.

Stockton-on-Tees.—S. W. Milburn & Partners, 9, Esplanade, Sunderland, are architects for additions to Elton Hall, for Industrial Orthopædic Society. Manor House Hospital, North End-rd., London, N.W.11.

Stretford.—T.C. have approved in principle £34,000 scheme for modernising Longford-rd. Highways Depot.

Sunderland.—R.D.C. is to erect 12 houses at Middle Herrington. Mr. Emmerson, Surveyor.

Sunderland.—Plans are being prepared by Newrick & Blackbell, 24, John-st., Sunderland, for rebuilding war-damaged workmen's club, Station-rd.

Tyldesley.—U.D.C. Surveyor to prepare plans for new swimming baths.

Urmston.—U.D.C. approved plans for extensions to Ann Challis Eventide Homes, Stretford-rd., for Urmston Housing Society, Ltd.; annealing furnace building at Mellors-rd. for F. Smith & Co. and extensions to bays 3 and 4 at Ashburton-rd. for Banister Walton & Co., Ltd.

Uttoxeter.—U.D.C. considering purchasing racecourse and constructing community and youth centre, sports ground and swimming bath.

Wallasey.—Housing Comm. have successfully negotiated for an additional allocation of 120 houses.

Wallsend.—Plans for extending Corporation Baths to be considered by T.C. Architects, P. L. Browne, Son & Harding, Pearl-bldgs., Northumberland-st., Newcastle-on-Tyne.

Wellington.—U.D.C. propose 34 houses. Plans by Surveyor, A. G. Barton.

West Hartlepool.—Needham & Thorp, 6, High Petergate, York, are architects for a skating rink and dance-hall for J. Dormand.

Wigan.—R.D.C. approved plans for: Extensions to Shevington Conservative Club, Hall-la., Writhington; extensions to Haigh Dye Works, for Blue Printers, Ltd.

Wirksworth.—U.D.C. propose 20 houses and four bungalows for aged at Middleton site. Plans by L. Wilson-Nunn.

Worcester.—T.C. propose extensions to Perryfields Children's Homes at £13,800.

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TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Alcester.—30 houses, for R.D.C.: *R. Kemp, Ltd., King's Heath, Birmingham.

Ashby-de-la-Zouch.—12 houses, together with sewage disposal works, etc., at Osgathorpe, for R.D.C. V. G. Bott, Architect and E.:—

	Housing	Sewage
W. A. Soars, Loughborough	£20,880	£1,869
T. F. Chapman & Co., Leicester	18,660	1,188
P. F. Barker, Long Whatton	17,700	1,733
*W. E. Griffin, School-la., Whitwick, nr. Leics. ...	16,942	1,166

(Subject to M.H. approval.)

Ayrshire.—100 houses at various sites, for C.C. R. G. Lindsay, architect, County-bldgs., Wellington-sq., Sandgate, Ayr: *A. A. Stuart &

Son (Housing), Ltd., Fitzroy-pl., Sauchiehall-st., Glasgow, C.2, £129,000.

Birkenhead. — Repairs at central depot of cleansing department: *James Griffiths & Sons, Ltd., 192, Bidston-ave., £7,090.

Blyth.—27 houses at Newsham-rd. D. W. Foster, B.E.: *Direct labour, £32,162.

Bootle C.B.—56 dwellings, scheme 15a, 28-acre site, nr. Ford Station. B.E. and S., Town Hall: *A. W. Glenn (Crosby), Ltd., 7, Glenn-bdgs., Moor-la., Great Crosby, Liverpool 23.

Boston, Lincs.—8 houses at Swineshead, for R.D.C.: *E. T. Mowbray & Son, Boston.

Brentford and Chiswick.—28 houses at Spencer-rd., Chiswick, for T.C. R. Humphreys, F.R.I.C.S., B.E. and S.:—

W. F. Davey & Co., Ltd., Hounslow	£44,687 13 1
Circle Construction Co., Ltd., Wembley	41,350 9 9
W. Turner (Builders), Ltd., W.1	41,094 10 0
D.S.M. (Contractors), Ltd., E.C.3	40,804 2 7
I. B. Connelly, Ltd., W.1	40,742 7 4
Norman Sinclair, Ltd., W.13	39,730 0 0
*L. & M. Construction Co., Ltd., 40, College-rd., Harrow	39,336 2 11

Camberwell.—Works, for B.C.:—36 three-storey dwellings at Mundania-rd. and Therapia-rd., *H. Richardson & Sons, Ltd., £70,027 (revised tender); five blocks of maisonettes and flats at Melford-rd., *J. Murphy & Son, £90,305 (revised tender).

Canterbury.—Erection of Reed-ave. County Primary School. L. Hugh Williams (A.), City A.: †Rice & Son, Ltd., Prudential-bldgs., Margate, £59,760.

Cornwall. — Erection of Falmouth (Beacon) County Primary School: *E. Thomas & Co., Ltd., Falmouth, £54,000.

Croydon.—10 houses at Leighton-st. redevelopment area: *G. E. Hubble, Carmichael-rd., S.E.25, £13,283.

Dover T.C.—50 houses at Buckland Valley and Green-la. Farms estate. B.E., Brook House: *J. B. Rose & Co., Ltd., 157, Sandgate-rd., Folkestone, £54,447.

Dudley.—44 garages, for T.C.: *Eadie & Co. (Wolverhampton), Ltd.

Durham.—64 houses at Sherburn, for R.D.C.: *Direct labour.

Hartlepool.—Office block at factory BT2/4 on Hartlepools Trading Estate. Architects: Newrick & Blackbell, John-st., Sunderland: *Higgs & Hill, Ltd., Leeds.

Ilkeston.—Houses at Colmanhay estate, for U.D.C.: *W. Beardsley & Son, 40, Heanor-rd., £7,494.

Leeds.—Adaptation of Iveson House, Cooksbridge, as residential accommodation: *Dunhill Bros., Bridge Works, Selby-rd., £12,454.

London.—Rebuilding fourth floor of 151-153, Gt. Portland-st. Architects, Mewes & Davis, 1, Old Burlington-st., W.1: *Amalgamated Building Contractors, Ltd., Bank-chmbs., 1, Wandsworth-rd., London, S.W.8, £7,234.

L.C.C.—Erection of classroom wing in light construction and war damage repairs at Athelney-st. school, Lewisham:—

J. & C. Bowyer, Ltd., Upper Norwood	£21,577
Harry Neal, Ltd., St. Marylebone	21,299
Unera Construction Co., Ltd., Kensington	21,265
A. Roberts & Co., Ltd., Westminster	21,247
J. Jarvis & Sons, Ltd., Westminster	21,220
Kent & Sussex Contractors, Ltd., Sidcup	20,660
Bunting Construction Co., Ltd., Lambeth	20,230
Hill & Gurr, Bromley, Kent	19,872
Galbraith Bros., Ltd., Holborn	19,545
*Henry Kent (Builders), Ltd., Lewisham (Architect's comparable estimate is £20,185.)	17,349

Cleaning and painting at Colvestone-cres. school, Hackney:—

Holland & Hannen and Cubitts, Ltd., Holborn	£7,278
Norman Sinclair, Ltd., Ealing	6,410
W. J. Simms, Sons & Cooke, Ltd., Westminster	5,148
*C.A.S. (Contractors), Ltd., Kensington (Architect's comparable estimate is £5,350.)	5,032

Erection of a new workshop annexe at Hammersmith School of Building:—

Sloggetts (Contractors), Ltd., Kensington	£29,675
H. T. Oliver & Sons, Ltd., Lambeth	29,664
Kirk & Kirk, Ltd., Putney	29,551
W. H. Gaze & Sons, Ltd., Westminster	29,287
C. P. Roberts & Co., Ltd., Holborn	28,989
Galbraith Bros., Ltd., Holborn	28,955
Walter Lawrence & Son, Ltd., Finsbury	28,282
Whyatt (Builders), Ltd., Balham	28,257
Henry Kent (Builders), Ltd., Lewisham	27,906
Foster & Dicksee, Ltd., St. Marylebone	27,829
Yeomans & Partners, Ltd., St. Marylebone	27,676
Thomas Lowe & Sons, Ltd., Hammersmith	27,139
*Unera Construction Co., Ltd., Kensington (Architect's comparable estimate is £28,101.)	26,256

Foundations and drainage for first section of White City estate No. 1 primary school:—

The Demolition & Construction Co., Ltd., Westminster	£7,288
Gee, Walker & Slater, Ltd., St. Marylebone	6,857
W. H. Gaze & Sons, Ltd., St. Marylebone	£6,697
Harry Neal, Ltd., St. Marylebone	6,330
Prestige & Co., Ltd., Westminster	5,974
F. Troy & Co., Ltd., Westminster	5,735
Sir Lindsay Parkinson & Co., Ltd., Holborn	5,594
C. Bryant & Son, Ltd., Birmingham	5,587
James Carmichael (Contractors), Ltd., Wandsworth	5,534
Anglo-Scottish Construction Co., Ltd., Wimbledon	5,432
*C. P. Roberts & Co., Ltd., Holborn (Architect's comparable estimate is £5,305.)	5,400

Erection of restaurant and lock-up shop, with two maisonettes above, at 18-20, London-rd., Forest Hill:—

William Mills and Sons, Ltd., Greenwich	£16,634
J. & C. Bowyer, Ltd., Upper Norwood	15,457
Greenaway & Son, Ltd., Camberwell	14,679
Campbell & McGill, Ltd., Chislehurst	14,643
Thomas & Edge, Ltd., Woolwich	14,272
Henry Kent (Builders), Ltd., Lewisham	13,998
Hill & Gurr, Bromley, Kent	13,969
Kent and Sussex (Contractors), Ltd., Sidcup	13,787
Gough Cooper & Co., Ltd., Dartford	13,408
*Snelling & Rayment, Wandsworth (Comparable estimate of private architects supervising work is £13,520.)	13,274

Construction of extension to Southfields of Frogmore storm relief sewer:—

John Mowlem & Co., Ltd., Westminster	£163,462
M. J. Gleeson, Ltd., North Cheam	150,932
Gough Cooper & Co., Ltd., Westminster	142,509
Howard Farrow, Ltd., Golders Green	140,338
W. T. Robbins & Co., Beckenham	138,808
A. Waddington & Son, Ltd., Harlesden	136,648
The Demolition & Construction Co., Ltd., Westminster	128,892
Kinnear, Moodie & Co., Ltd., Lewisham	115,997
Hussey, Egan & Pickmere, Ltd., Birmingham	108,900
Mitchell Bros., Sons and Co., Ltd., Westminster	99,663
*Paterson & Dickinson, Ltd., Queensbury (Comparable estimate of chief engineer is £95,645 19s. 2d.)	93,219

¶London (M.O.W.).—Contracts placed by M.O.W. for week ending October 15:—

London: 1, 6 & 13, Lowndes-sq., Exterior repairs and painting, H. Brown & Sons (Builders), 1, Westbury-rd., W.2; St. Mark's School, St Charles-sq., W.10. Dining-room and kitchen, R. E. Spooner, Ltd., 340, Staines-rd. (West), Ashford Common, Middx.; Our Lady's Convent, 14-16, Amhurst Park, N.16, Canteen kitchen, Geo. Bell & Son, Ltd., 53, Bruce Grove-rd., Tottenham, N.17; Branch Post Office, 44, Albemarle-st., Alterations, John Greenwood, Ltd., King William-st. House, Arthur-st., E.C.4; 1-8, Onslow-gdns., Exterior repairs and painting, W. N. Negus, Ltd., Station Works, King James-st., S.E.1. *Beds*: M.O.W. Supplies Storage Depot, Wilstead, Internal painting, J. Perkins & Son, Ltd., 50, Tavistock-st., Bedford. *Derbys*: St. York-rd. School, Church Gresley, Central kitchen, Arthur Holmes & Son, Ltd., Dallow Bridge, Burton-on-Trent, Staffs. *Herts*: Fawbert & Bernard School, Sawbridgeworth, Kitchen and dining-room, Ekins & Co., St. Northern Works, Hertford. *Kent*: Inland Revenue Rating, The Rookery, St. Mary Cray, Occupational services, Kent and Sussex Contractors, Ltd., 109, Station-rd., Sidcup; Rainham County Modern School, Dining-room and kitchen, Shave Bros., 169, Maidstone-rd., Chatham. *Midlothian*: Abbeyhill Telephone Exchange, Edinburgh, Extension, John Best (Edinburgh), Ltd., Warriston House, Edinburgh. *Staffs*: Stoke Telephone Exchange, Erection, C. Cornes & Sons, Lichfield-st., Hanley; Cold Norton Farm, Stone, Alterations and erection of two pairs of cottages, M. A. Boswell (Contractors), Ltd., School-st., Wolverhampton; Junior County School, Eccleshall, Kitchen and dining-room, E. G. Lester, Cannock-rd., Stafford.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended October 15:—*Surrey*: Miscellaneous work, H. H. & F. Roll, Ltd., Epsom. *Worcs*: Road work, Gulistan-rd. Constructions, Ltd., Leamington Spa. *Staffs*: Building work, M. A. Boswell (Contractors), Ltd., Wolverhampton. *Ches.*: Miscellaneous work, F. Thomas & Co., Chester; miscellaneous work, L. L. Roberts (Cheshire), Ltd., Bebington. *Brecknock*: Miscellaneous work, Western Trinidad Lake Asphalt Co., Ltd., Cardiff. *Wilts*: Painting and decorating work, Arnold Sharrocks, Ltd., Battersea.

Looe.—Five bungalows at Sun Rising estate. G. H. Ivory & Partners, 24, Athenæum-st., Plymouth: *H. Hocking & Sons, East Looe, Cornwall, £5,864.

Malvern.—Ten houses at Mathon-rd., West Malvern, for U.D.C. C. C. Judson, A.M.I.C.E.: *Ballats, Ltd. Wolverhampton-rd., Walsall.

Matlock.—30 houses at Hurst Farm estate, for U.D.C.: *I. Groves & Sons, Ltd., £48,099.

Midlothian.—New Scottish research station at Thorntonhall, in connection with the East Kilbride Development Corporation's schemes. A. S. Reid, architect, Ministry of Works. Abell House, John Islip-st., London, S.W.: *James Miller & Son, Ltd., Corstorphine-rd., Corstorphine, Edinburgh.

Newcastle.—Erection of new store, for Laws Stores, Ltd., Stephenson-rd.: *J. Horne, Ltd., 3, Petts-st., Newcastle.

Newton Aycliffe (Co. Durham).—Converting premises into architects' and finance departments, for Aycliffe Development Corporation. Plans by Corporation's Chief Architect: *Tarslag, Ltd., Bowesfield-la., Stockton-on-Tees.

Oldham.—10 houses at Pennine View estate: *Greenwoods Building Industries, Oldham.

Rochdale.—Completion of market shops at the Arcade, New Market-bldgs: *Lear & Heywood, Ltd., Law-st., Sudden, Rochdale.

Runcorn.—Houses, for R.D.C.: 12, *L. Williams, The Gables, Elton, Ince, nr. Chester; 16, *A. Garner, 89, Bellencont-rd., Frodsham.

Rutherglen.—New extensions for the Clyde Paper Mills Co., Ltd., Clyde Paper Mills. F. A. MacDonald & Partners, architects and concrete engineers, 11, Woodside-ter., Glasgow, W.3: *Melville, Dundas & Whitson, Ltd., Blythswood-sq., Glasgow, W.C.2.

St. Ives, Hunts.—8 houses at Offord Cluny, for R.D.C.: *Lingfield Construction Co., Ltd., St. Ives.

Staffordshire.—County primary junior and infants' school, Newcastle-under-Lyme, for E.C. B.E. & S., Lancaster-bdgs., High-st., Newcastle-under-Lyme. Quantities by Borough Engineer and Surveyor:—

L. Bates, Ltd., Bycars-rd., Burslem	£46,327
Cooper Bros. & John Clayton, Catherine-st., Macclesfield	45,351
Dickinson (Burslem), Ltd., Bon-st., Burslem	44,397
G. H. Key & Co., Ltd., 7, Crossway-rd., Sneyd Green, Burslem	43,462
Elsby Bros., Sneyd Hill, Burslem	43,428
Ball & Robinson, Trent Bridge Works, Stoke-on-Trent	43,425
Stephen Heath & Son, Newcastle	42,778
Baddeley Bros., Peel-st., Wolstanton	42,593
Madew & Wardle, Ltd., Market-la., Newcastle	42,379
R. John Addison, Ltd., Market Chambers, 4-6, Market-st., Longton	42,124
F. W. Taylor, 27, St. George's-ave., Wolstanton	41,727
P. Bailey & Co., Ltd., Hanford, Stoke-on-Trent	41,474
*H. Stubbs, Liverpool-rd., Newcastle	39,794

Stoke Newington.—18 flats at Defoe-rd. for B.C.: ‡William J. Jerram, Ltd., Sandford-rd., E.6, £23,284 (subject to loan sanction and L.C.C. approval).

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39 Thurloe Street, London, S.W.7

Stoke-on-Trent. — Nursery schools, for E.C.: Blurton County Primary, *H. Beresford & Co., Ltd., Fenton, £9,307; Lyme-rd., Meir, *A. V. Shenton, Ltd., Longton, £9,842; Northwood, *W. Leake & Co., Ltd., Sneyd Green, £9,826; Dolbysla., Burslem, *W. Leake & Co., Ltd., Sneyd Green, £11,908; Summerbank, Tunstall, *H. J. Emery & Co., Basford, £10,526; Locketts-la., Longton, *H. Beresford & Co., Ltd., Fenton, £9,950.

Swansea.—Works, for C.B. Kitchen dining-room at new grammar school, Sketty: ‡Bennett Bros. (Contractors), Ltd., Heathfield Yard, Swansea; erection of primary school at East Penlan, Treboech:‡ R. B. Burden, Ltd., Staines-rd., Hounslow, Middx.

Tarvin.—6 houses at Tiverton, for R.D.C.: *William Hughes, Farndon, £7,197.

Wakefield.—24 flats at Flanshaw estate, for T.C.: *P. Rhodes, Ltd., Leeds, £19,580.

Walsall.—6 houses at Green Rock-la., for B.C.: *Carney Bros., Wall Heath, Staffs.

Walthamstow. — Demolition and rebuilding war-damaged wing, Wm. McGuffie, Sec. Sch. Mr. Frank H. Heaven (A.), A.R.I.C.S., Arch. to Ed. Comm., Old Monoux Building, High-st., Walthamstow:—

Grover, S. C., Ltd., E.17	£7,813
Chappell, G. H., Sons & Co., Ltd., Loughton	7,316
Field-Davis, Ltd., Barking	6,942
Attwell, P. A., & Sons, Ltd., E.17	6,531
Fairhead, G. A., E.17	6,439
Foster, C., & Sons, Ltd., Loughton	5,995
Manning, C. J., Ltd., E.7	5,887
Horswill, H. C., Ltd., E.7	5,680
Miller, G. H., & Co., Ltd., E.7	5,551
‡William & Jerram, Ltd., E.6	5,103

Wandsworth.—Erection of flats, for B.C.:—
Baskerville-rd.—6 flats on each of 2 sites—

H. T. Oliver & Sons, Ltd., S.W.9	£22,413
Leightons (Contractors), Ltd., W.1	20,155
Whyatt (Builders), Ltd., S.W.12	19,427
Tamworth Park Construction Co., Ltd.	18,490
Field-Davis, Ltd., Barking, Essex	18,465
*W. F. Marshall, Ltd., Buckhurst Hill	18,162

Lambourn-rd.—6 flats—

Leightons (Contractors), Ltd., W.1	£11,530
H. T. Oliver & Sons, Ltd., S.W.9	11,202
Harold & Bertram, Ltd., S.W.12	10,289
Woodcock Bros., Deburgh-rd., S.W.19	9,410
W. F. Marshall, Ltd., Buckhurst Hill	9,350
*T. Ringham & Co., Ltd., S.W.19	8,833

Orlando-rd.—6 flats—

H. T. Oliver & Sons, Ltd., S.W.9	£11,302
Leightons (Contractors), Ltd., W.1	10,653
Harold & Bertram, Ltd., S.W.12	10,391
Whyatt (Builders), Ltd., S.W.12	9,877
W. F. Marshall, Ltd., Buckhurst Hill	9,440
*Woodcock Bros., Deburgh-rd., S.W.19	9,410

Clapham Manor-st.—6 flats—

Harold & Bertram, Ltd., S.W.12	£13,300
H. T. Oliver & Sons, Ltd., S.W.9	12,400
Leightons (Contractors), Ltd., W.1	11,639
Whyatt (Builders), Ltd., S.W.12	10,967
Woodcock Bros., Deburgh-rd., S.W.19	10,928
*W. F. Marshall, Ltd., Buckhurst Hill	10,594

Lessan-ave.—24 flats in 4 blocks—

H. T. Oliver & Sons, Ltd., S.W.9	£44,356
Harold & Bertram, Ltd., S.W.12	£39,082
Flowitt & Co., Ltd., S.W.19	37,678
Whyatt (Builders), Ltd., S.W.12	36,957
W. F. Marshall, Ltd., Buckhurst Hill	35,860
*J. Jenkins, Ltd., Sherwood-ave.	34,450

Wem.—16 houses on four sites, for R.D.C.: *Allman Bros. (Builders), Ltd., Clayton, Newcastle, Staffs.

Worcs.—Site works and substructure for Poolbrook School, Malvern, for C.C. L. C. Lomas (F.), County A. Quantities by A. W. Baylis & Baylis, Birmingham:—

Ashmores, Ltd., Gloucester	£36,954
C. C. Lampitt, Malvern	33,761
T. Powles & Son, Ltd., Malvern	33,418
M. Wilesmith & Son, Ltd., Malvern	33,190
Collins & Godfrey, Ltd., Tewkesbury	32,997
C. Bryant & Son, Ltd., Birmingham	32,691
Wilson Lovatt & Sons, Ltd., Wolverhampton	31,546
Smith Bros. (Construction), Ltd., Birmingham	31,229
T. Vale & Sons, Ltd., Stourport-on-Severn	31,265
Espley & Co., Ltd., Evesham	31,219
T. Broad, Ltd., Malvern	29,954
*G. Webb & Son, Ltd., Birmingham	29,761

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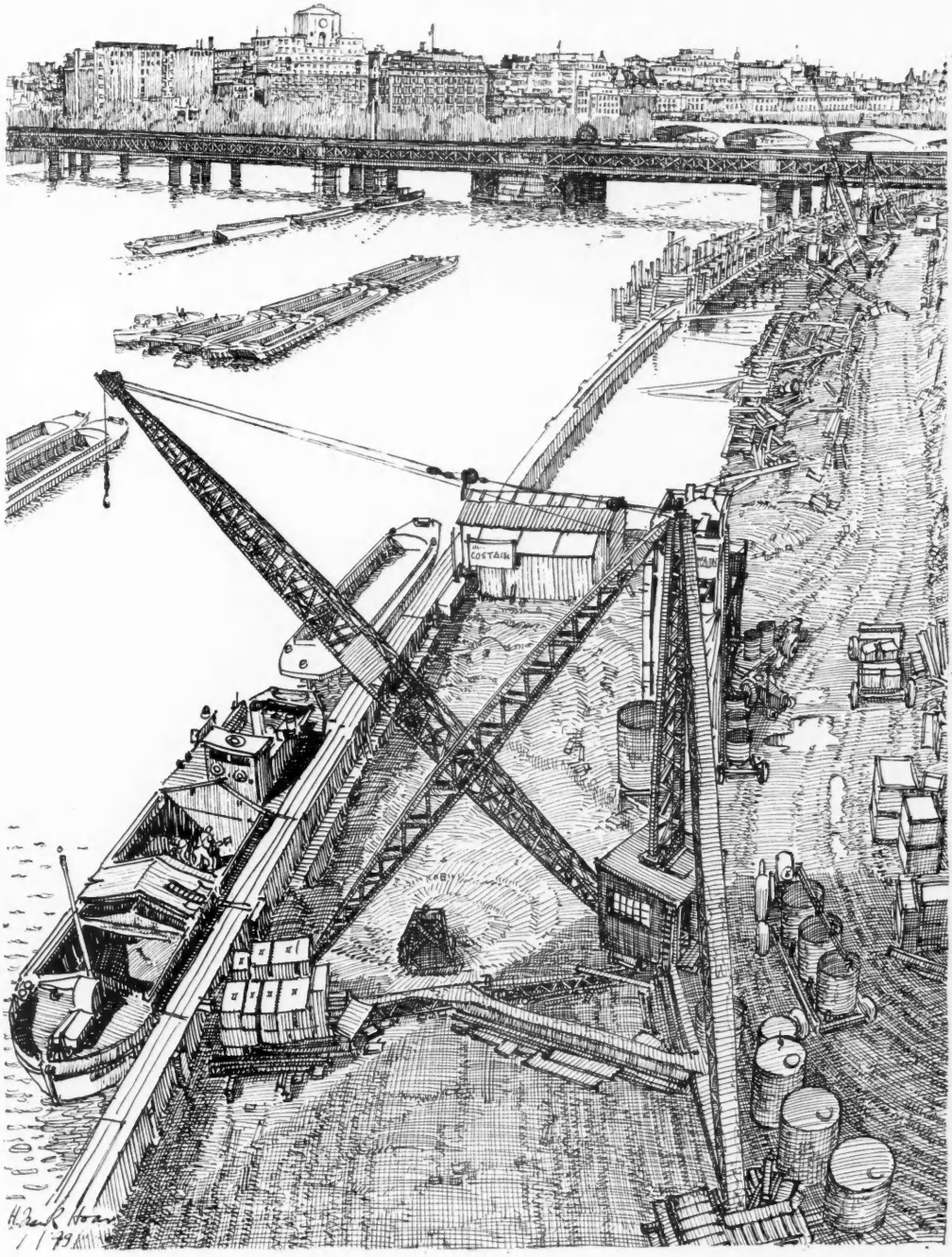

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2.—The new South Bank wall, looking from the cornice level of County Hall towards Hungerford and Waterloo Bridges.